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JOHN LEE.



AN

ILLUSTRATED WEEKLY JOURNAL

OF

HORTICULTURE IN ALL ITS BRANCHES.

FOUNDED BY

W. Robinson, Author of "The Wild Garden," "English Flower Garden," &c.

"You see, sweet maid, we marry
A gentle scion to the wildest stock
And make conceive a bark of baser kind
By bud of nobler race: This is an art
Which does mend nature: change it rather
'The art itself is nature'—*Shakespeare.*

VOL. XXVI.—CHRISTMAS, 1884.

LONDON:

OFFICE: 37, SOUTHAMPTON STREET, COVENT GARDEN, W.C.



TO

JOHN LEE,

The Royal Vineyard Nursery, Hammersmith, the oldest of London nurseries,

THE TWENTY-SIXTH VOLUME OF "THE GARDEN"

IS DEDICATED.

W. R., Jan. 1, 1885.

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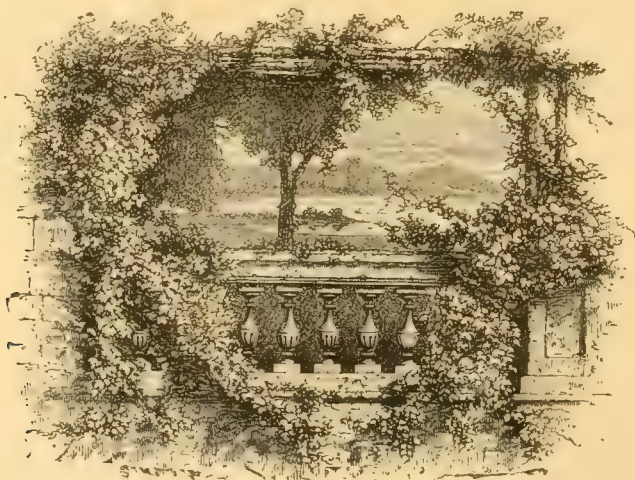
ALSTROEMERIA AURANTIACA	540	HEUCHERA SANGUINEA	360
AQUILEGIAS, HYBRID, GROUP OF	320	IXIAS, GROUP OF	340
BIGNONIA CHERERE	520	LESCHENAULTIA BILOBA MAJOR	298
BROWALLIA JAMESONI	6	MUSCARI, FOUR SPECIES OF	136
CHRYSANTHEMUM CORONARIUM	440	ODONTOGLOSSUM ELEGANS	276
CISTUS FORMOSUS	420	ODONTOGLOSSUM ØRSTEDI	160
COLUMBINES, GROUP OF HYBRID	320	ODONTOGLOSSUM PESCATOREI VEITCHIANUM	112
COREOPSIS LANCEOLATA	460	ODONTOGLOSSUM ROEZLI VAR. ALBUM ..	232
DIANTHUS ALPINUS	184	OENOTHERA MARGINATA	480
EPACRIS, NEW VARIETIES OF	68	PAPAVER NUDICAULE VARS.	380
ERIGERON AURANTIACUS	251	PHAIUS TUBERCULOSUS	46
ERODIUM MACRADENIUM	184	PRIMULA OBCONICA	206
GAILLARDIA ARISTATA GRANDIFLORA ..	500	ROMNEYA COULTERI	400
GRAPE HYACINTHS, GROUP OF	136	SENECIO MACROGLOSSUS	90
HELIANTHEMUM FORMOSUM	420	STREPTOSOLEN JAMESONI	6
HEPATICAS, GROUP OF	21		

JOHN LEE.

OF Mr. John Lee, to whom this volume of *THE GARDEN* is dedicated, little need be said, widely known as he is, and much respected, and hale and hearty in his retirement, after fifty-four years' active work in connection with the Royal Vineyard Nursery, Hammersmith, the only one now remaining on the Great Western London Road, on which at one time there were so many. Even the Royal Vineyard itself has been greatly curtailed, the railway having encroached on it on the eastern side, and on the south for a charming Rose garden has been substituted a row of villa residences. The offices, however, still occupy the old spot, and there is yet a remnant of the nursery left—a nursery coeval, it may be said, with the history of modern gardening. Mr. Lee's father died in 1824, leaving him at 18 years of age the sole manager of a large and important business (his brother, the late Mr. Charles Lee, being still at school), and how well he succeeded in carrying it on goes without the saying. The ground on which the nursery stands was formerly a vineyard, and wine was actually made there as late as the middle of the last century.

A thatched house was built in the grounds, the upper part of which was used as a dwelling house and for selling the wine, and the cellars for storing it. This house was formerly occupied by Worlidge, and the most celebrated of his works were executed here. The site was warm and well sheltered, and Mr. James Lee, the founder of the nursery, was not blind to its advantages. James Lee, like so many nursery gardeners, was a Scotchman. He was born at Selkirk in 1715, the year of the rebellion, and, again like many other Scotchmen, turned his face southward to seek his fortune. When he first came to London he was employed at Syon, and afterwards at Whitton, by the Duke of Argyll. About 1745 he entered into partnership with Mr. Lewis Kennedy, gardener to Lord Bolton, at Chiswick, and commenced a nursery on the ground occupied by the old vineyard. He was a good botanist, and wrote an "Introduction to Botany" based on the works and writings of Linnæus. Lee's "Introduction to Botany" went through five editions, and was for years in high repute, and Lee is frequently quoted or referred to as an authority by Loudon and others. He died in 1795, at the advanced age of eighty years, his partner, Mr. Kennedy, having died previously. The nursery was carried on by the sons of the two partners till 1817, when it became the undivided property of a second James Lee, the son of the author of the Introduction, who died in 1824, leaving two sons, John and Charles. John, the subject of our present memoir, continued to manage the establishment until Charles was old enough to help him, when the two carried it on conjointly till 1876, when John retired, and William Lee, the son of Charles, became associated with his father, and succeeded him in the management of the business.

Lee's nursery had and continues to maintain the highest rank. By it many new plants were introduced into this country. By the introduction of the Fuchsia alone the firm have surely earned the gratitude of every window and cottage gardener. They maintained a collector in America, who sent home several new Oaks and other plants, and, in conjunction with the Empress Josephine, they also had another at the Cape of Good Hope, from whom they received many new Heaths, Ixias, and other South African plants. They had also the first China Rose, in 1787. Besides their grounds at Hammersmith, on the north side of the High Road, they have also nurseries at Ealing, Isleworth, Hounslow, and Feltham.



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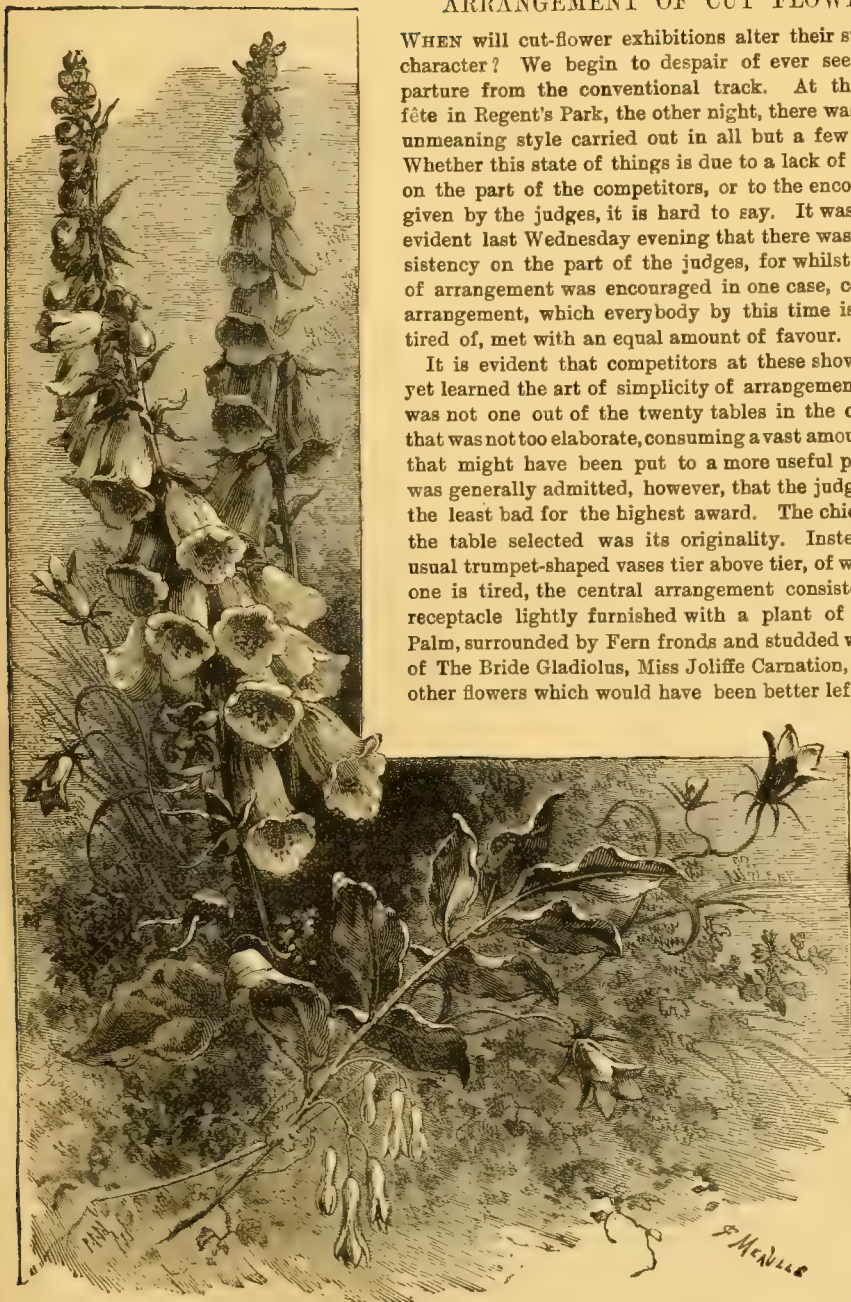
ARRANGEMENT OF CUT FLOWERS.

WHEN will cut-flower exhibitions alter their stereotyped character? We begin to despair of ever seeing a departure from the conventional track. At the evening fête in Regent's Park, the other night, there was the same unmeaning style carried out in all but a few instances. Whether this state of things is due to a lack of originality on the part of the competitors, or to the encouragement given by the judges, it is hard to say. It was, however, evident last Wednesday evening that there was an inconsistency on the part of the judges, for whilst simplicity of arrangement was encouraged in one case, complicated arrangement, which everybody by this time is well-nigh tired of, met with an equal amount of favour.

It is evident that competitors at these shows have not yet learned the art of simplicity of arrangement, for there was not one out of the twenty tables in the competition that was not too elaborate, consuming a vast amount of effort that might have been put to a more useful purpose. It was generally admitted, however, that the judges selected the least bad for the highest award. The chief merit of the table selected was its originality. Instead of the usual trumpet-shaped vases tier above tier, of which everyone is tired, the central arrangement consisted of a flat receptacle lightly furnished with a plant of an elegant Palm, surrounded by Fern fronds and studded with flowers of The Bride Gladiolus, Miss Joliffe Carnation, and a few other flowers which would have been better left out. The

secondary arrangements were quite novel. They consisted of the globular masses of the new Japanese Hare's-foot Fern (*Davallia Mariesi*), beset all over with luxuriant fronds. These were studded with flowers of Odonto-

glossum *Alexandrae*, the whole having a pretty effect, although lacking that simplicity which is always so much admired by people of good taste. The other prizes fell to those whose tables were of the usual trumpet-above-trumpet composition, taking as many hours to furnish as it should minutes. Then there was, of course, the usual display of the chinaware merchant, who seems to regard flowers in quite a secondary light, and cares only to display his goods. There was, moreover, the competitor who believes in the aid of flat mirrors to imitate water and other puerile devices, and one actually went so far in the way of violating good taste as to have "made-up" small birds in imitation of stuffed birds. Such combinations ought to be vetoed, but then they serve as a contrast to others who show better taste. The way in which poor flowers are contorted and otherwise maltreated at these displays is terrible to behold. The wiring of flowers ought surely to be abolished. A flower loses half its charm if seen in such a crippled condition. This display of bad taste in flower arrangement would not matter much were it not that the public are apt to regard these exhibitions in the light of a school in which the best taste is displayed. Would-be floral decorators should take a few lessons in colour harmony before they begin to practise their art; then perhaps we should not see such inharmonious mixtures as are now common, particularly among the coloured bouquets, wreaths, &c. Baskets and vases were not so bad, and a few, especially those arranged with one or two kinds of flowers, such as the English Irises, were really pretty. One competitor had a bowl of English Irises mixed with Grasses, but if the foliage of the Irises had been used instead of that of the Grasses, a much better effect would have been the result; another had Iceland Poppies, yellow and white, symmetrically arranged with Grasses and Ferns. Put a handful of flowers cut with good long stalks lightly in a bowl, and surround them by bold silvery foliage, such as that of the common horned Poppy, and the arrangement would have received approbation. As regards the arrangements for alcoves, recesses, arches for sideboards, &c., they did not comprise a single commendable example, and some were simply hideous, one strikingly reminding one of a Punch-and-Judy show-box set in greenery. The arrangements for ball-rooms had two or three exponents, none good—all being formal in the extreme; better arrangements can



be seen any day in the florists' shops in Covent Garden Market; one competitor had an imposing display so arranged that one side of it exactly reflected the other, even to the minutest detail. But enough, we think, has been said to show that the art of artistic flower arrangement sadly needs reform.

FLOWER GARDEN.

HYBRID CLEMATISES.

ARE not raisers of these fine hardy flowers in a general way working in a wrong direction? The great aim now seems to be to produce large-flowered kinds, and very fine some of these are, but as they mostly have much of the lanuginosa type in them, they are too tender to become favoured of the million. They require too much culture to be of any great service as outdoor climbers, and many of them do not flower well under circumstances in which such a typical hardy continuous flowering form as Jackmanni proves eminently satisfactory. C. Jackmanni is a perfect model of what an outdoor Clematis should be, and of its colour there is no other variety, and I do not see how there ever can be another to surpass, or for the matter of that equal it. What a treasure the new white kind will be if, as is said, it is a counterpart in all but colour of Jackmanni. Let us hope that it will prove to be a real companion plant to it; then we shall have two colours in reliable hardy varieties, and shall only require a good red to complete a trio, which for utility as hardy outdoor flowers would stand almost unique. But although a good red-flowered kind may not yet be forthcoming, there is every reason for expecting it, and I cannot help thinking that if those engaged in raising new Clematises had persistently directed their efforts in this direction, it would have been obtained long ere now. It is not as if an entirely fresh departure in colour was needful before this desirable result could be obtained. On the contrary, we have in *Viticella rubra grandiflora* quite a lovely shade of red, which one would think would soon under the hybridist's hands become intensified. It is strange how rarely one sees this showy and most distinct Clematis; it is one of the very best that can be planted for outdoor decoration, so hardy and free flowering is it. I can scarcely think that its good qualities have been taken into account by those who have improved the Clematis probably on account of the comparatively small size of the flowers. But really what has size of bloom to do with effectiveness? Very little, as we may every day see in the flower garden. Can anything be much more brilliant than a bed of Phloxes? and yet as compared with many things the individual blooms are small indeed. It is just the same with the Clematis we want in the open air. We want masses of effective colour, and this is just as well furnished by flowers 4 inches across as by those double that size. Indoors it is rather different; there we are more apt to look to size and beauty of form in individual flowers, and even the tenderest of kinds will thrive well with but little trouble under glass. The proper way would be to make

TWO DISTINCT CLASSES, the one really hardy, vigorous, continuous, free-flowering, and thoroughly trustworthy for outdoor culture; the other suitable only for indoors. Then purchasers would know what to select, which they do not at present, unless they have some knowledge of the kinds, for very hardy and tender varieties are all catalogued together. Considering what a fine break was obtained in Jackmanni, and how long that fine kind has been in cultivation, it is really a matter for surprise that so very few thoroughly reliable kinds should have been obtained. As a fact, out of the large number of varieties in cultivation, the out-door popular ones may be said to be represented by less than half-a-dozen kinds: Jackmanni, Lady Bovill, rubella, rubro-cerulea, and violacea about comprise the list. The last two are hardly wanted if you have the three first, and this is the trio of Clematises which, as near as can be, represents the

worth of this flower for open-air culture, and of these three, one, Lady Bovill, is confessedly somewhat tender. It wants growing—which the other two do not, for they will hold their own amongst a rather rampant vegetation, and in ordinarily favourable circumstances they will increase in beauty from year to year. This is the ideal Clematis, and until other colours are worked up to this standard, comparatively little has been done to render the Clematis a popular garden flower. I may be told that many of these

FINE KINDS OF CLEMATISES may be seen doing well in not a few places in the open. I am aware of that, but they can only do well out-of-doors under exceptionally favourable circumstances either as regards climate or skilful attention. Can anyone say that such kinds as lanuginosa candida, Lady Londesborough, Lady Caroline Neville, Otto Froebel, &c., are often seen in good condition in villa gardens? and it is only the frequent presence of any plant in good health in small gardens which really proves its popularity and suitability for our climate. J. C. B.

LILIUM TENUIFOLIUM.

FOR what may be termed intrinsic beauty there is no other Lily that approaches this, and though all Lilies are stately, this is the only one that is really graceful. While *L. auratum* and *giganteum* represent the opposite extreme in point of size, and while, like all others, they are beautiful, it must be admitted that in addition to their being somewhat tender, they are also rather coarse in all their parts. On the contrary, *L. tenuifolium* is not only very fine and delicate in all its parts, but is the hardiest of the whole Lily family. I have not yet seen a description of this Lily that did it anything like justice. It is usually described as being from 12 inches to 15 inches in height, with from three to five flowers; while the fact is, that when fairly established it will grow 3 feet or more in height, and yield from fifteen to twenty flowers, often more. Neither is anything ever said about its wonderful fragrance, which, though different from that of *L. auratum*, being more spring-like, is fully as intense, and on a warm sunny morning is almost oppressive. Another fact not mentioned is the delicacy and beauty of its foliage, which is not at all inferior to that of some of the finer Ferns for a month previous to blooming. Grown in masses, no plant makes a better display, and, as an old gardener once said, "It is worth growing for its foliage alone, but when crowned with its orange-coloured buds and brilliant scarlet flowers, it is the perfection of beauty." This is high praise, but having grown this Lily for many years I can confirm all that is here said of it, and I may add that it appears so like a rare gem from the Tropics, that it is not easy for the uninitiated to believe it to be a native of the wintry plains of Siberia. It begins to flower in June, and the bulbs are thoroughly ripe and ready for removal by the last of August. I frequently find some that, not satisfied with flowering in June, get uneasy and flower again in the last of September or in October, though these late blooms are not so highly coloured as the early ones. Now that bulbs of this Lily can be had at a reasonable price, they should be planted in bedding quantities, or as they succeed Tulips in their time of flowering they may be planted together, and the result will be a pleasant surprise to those who are strangers to the effect that such a mixture would produce. A bed of them 60 feet long and 4 feet wide would make a show that would not be speedily forgotten.

CLOSE PLANTING.—There are two advantages in planting this Lily closely; first, it is not so easily disturbed by the wind, as plants massed together support one another; secondly, one gets a more effective display of its wonderful scarlet colour. Many of the bulbs will send up two or three stalks each, but without increasing the number of bulbs, being different in this respect from any other Lily with which I am acquainted. In the whole Lily family there is no other one that will bear nearly such extreme cold, but it will not

grow in water. For garden culture, drainage, plenty of sand, and a slight elevation of the bed—remembering that however much many other Lilies enjoy shade, *tenuifolium* does best with all the sunshine it can get—will insure success with this Lily and make it one of the most satisfactory kinds grown. It should be planted as early as October—earlier if bulbs can be had—and should be covered with about 3 inches of soil. For pot culture few Lilies are as good, and none are better. Being by nature an early bloomer, it responds readily to ordinary good treatment. It requires more sand in the potting compost than most other Lilies, and after the shoots make their appearance they should have air to give the foliage substance and sunshine to make the flowers brilliant. If the bulbs are over 1 inch in diameter (and very few of this species are), three in a 7-inch pot will be plenty. Of the ordinary size five may be planted in a 7-inch pot, bearing in mind that if they become too much crowded while growing to cut out some of them. The earlier they can be potted the sooner they will flower. With the convenience of a greenhouse they may be had in January, and even earlier. Of its capabilities in this direction there is, however, yet something to be learned, but I have had ordinary imported bulbs in bloom the first week in February in a common window.

THE EFFORT TO PRODUCE SEEDS wastes the vitality of the bulbs, and such bulbs, while not satisfactory for garden purposes, are comparatively worthless for forcing; therefore the capsules should be pulled off the moment the flowers fade. New York. E. HUFTELEN.

Cliveden Yellow Pansy.—I have in my garden a bed of this Pansy which commenced to flower early in February, and it is now, at the end of June, as gay with flowers as it has ever been; indeed, ever since the middle of March it has been a solid mass of the brightest yellow. Although one of the oldest of bedding Pansies, this is still one of the best. The plants under notice appear as if they will go on flowering all the summer.—J. C. C.

Solomon's Seal.—I was just a little surprised on reading Mr. Groom's paragraph (p. 509) to see this described as having "great arched spikes of pure white bells." Is there really a pure white variety? or does Mr. Groom refer to the old greenish white-flowered kind? A variety having flowers as white as those of Lily of the Valley would be a great gain, and yet is it not Keats who refers to its bells even as little green-tipped lamps of light?—B.

Border Pink Lady Fitzhardinge.—A very free, useful kind with large flowers of a deep pink colour, shading away a little paler to the outside; petals rather deeply fringed, very sweetly scented, a plant of strong constitution and easy to raise from cuttings. It was raised some years ago from seed in Lord Fitzhardinge's garden at Cranford House, Hounslow. The "old Yorkshire Pink" of nurseries, which I have not seen, I am told is much like it.—G. J.

The Parsley-leaved Grape Vine has long been cultivated in this country; it was at one time cultivated a good deal for its fruit. At present, however, it seems to have fallen into unmerited neglect; as a fine-foliaged plant for covering walls or arbours it is one of our best of deciduous climbers. Another remarkable variety of the Grape Vine is the Claret Grape (*Vitis vinifera foliis rubescentibus*), the leaves of which assume a deep claret colour in autumn. When clothed in its autumnal garb this is one of the most ornamental climbers of which English gardens can boast.—N.

Dry weather flowers.—The following are flowering satisfactorily, notwithstanding the long-continued drought, viz.: *Delphinium formosum* and several of the new double varieties of this useful hardy plant, Canterbury Bells, Veronicas, *Pæonies*, *Centranthus ruber*, East Lothian Stocks, Sweet Williams, Antirrhinums, and Pinks, amongst which I must make special mention of

that useful variety Mrs. Sinkins, which is a solid mass of the purest white; *Gladiolus byzantinus* and *The Queen*, *Campanula pulcherrima*, Foxgloves, Pansies, Violas, *Erigeron speciosus*, *Gaillardias*, *Pyrethrums*, and *Erodiums*.—J. C. C.

***Dianthus hispanicus*.**—I should be obliged if any of your readers could give some information respecting this Pink—when it was introduced, and whether it was ever generally known; it was given me by a Scotch friend as a brilliantly coloured kind among others, and labelled accordingly. A year or two ago a great authority on hardy plants, Dr. Lowe, when looking over our collection, said "You have *Dianthus hispanicus*, which has been, I believe, lost for thirty years, but it should have dark stems." In looking at a healthy plant in the border we found that the stems were dark. It has been much admired in our garden, and when grown in full sun the colour is most brilliant.—GEORGE F. WILSON, *Heatherbank, Weybridge*.

Too many Pelargoniums.—Last summer I saw in front of a small villa eight large beds filled with zonal Pelargoniums, which occupied the whole of the available space. When I first saw them it had been fine for some weeks, and the plants were in a full blaze of bloom, making, of course, a grand show, but, to my mind, anything but a pleasing one, so woefully lacking was it in the one great desideratum in flower-garden arrangements, viz., variety. I passed that way again a fortnight later, and what a change was there, a week's heavy rain having washed nearly all the brightness and beauty from those beds. I could not help thinking that the owner of that garden must then have envied his neighbour opposite, whose little plot was as gay as ever with common Marigolds, Indian Pinks, and several other such bright, rain-proof flowers.—J. C. B.

Double Daffodils from seed.—Has "J. C. B." (p. 509) any knowledge of new varieties of double Daffodils having been raised during the present century? In 1889 Mr. Harrison Weir gave me some roots of double poeticus, stating that they were raised from seed the first year; the flowers were small and distinct looking. This past season the flowers were much larger. I shall pay particular attention to this plant, and see whether in future years it possesses any character different from the ordinary double variety. Dr. Brown, of Hull, sent to the Daffodil Conference a double form of *N. nanus*, and in a letter to me stated that he had raised it (one bulb only) from seed. Some of your readers may know of double Daffodils coming from seed, and will make known the same. When "J. C. B." has broken open the seed pod of *N. Telamonius plenus*, will he kindly say how many black seeds he found?—P. BARR.

Two fine hardy plants.—One is a common Male Fern, 4 feet high and as much through, with more than 100 rich green fronds—a graceful mass of foliage such as I have rarely seen, and which the majority of choice and rare exotic Ferns can never produce. The other is the yellow Flag Iris (*I. Pseudacorus*), 10 feet high and 6 feet through, as noble an object as can well be conceived, the long bright green leaves recurring gracefully, and lit up by numerous bright yellow flowers. There grows not a more stately hardy flower than this Iris when highly developed, and where it can have a place on the water margin it should be allowed to remain undisturbed. These two plants are growing side by side close to a pool of water, and the roots descending into it is undoubtedly the cause of such exceptional development.—J. C. B.

Alliums, as a rule, are a class of plants seldom recommended for their beauty, either for rockwork or for the flower border; yet to banish them altogether would be to deprive our gardens of a few really handsome plants, and plants, too, that can always take care of themselves without extending beyond their allotted space. Their smell if bruised is against them, and although the Neapolitan Allium (*A. neapolitanum*), the flowers of which are beautiful and fragrant, is sometimes used in bouquets, this objection to it is always more or less

felt. It is, however, a pretty border plant, and in company with *A. cœruleum*, *Moly*, *scorzoneræfolium*, and *pedemontanum*, undoubtedly useful and decorative; the last especially, with its numerous purple, drooping, Tulip-like flowers is good enough for pot culture. *A. giganteum*, a species of recent introduction, is well named, growing, as it does, even taller than the well-known *A. siculum*. Its leaves are flat, strap-shaped, and of a light glaucous green, and the flowers, though small individually, are of a purplish colour and collected in countless numbers into a large globular head from 2 inches to 3 inches in diameter. This sort is a decided acquisition.—D. K.

Alpine Anemones.—I observe that "F. W. B." includes *Anemone Pulsatilla* amongst Anemones readily increased by root cuttings. The long tap root of this species has hitherto deterred me from making the experiment, and the more so, as the seed invariably ripens in abundance and germinates freely in a cool greenhouse temperature if sown in a pot or saucer and covered over with a sheet of glass till the young seedlings are well up. In October last year I treated the seed of *A. sulphurea* in the same manner. The young plants began to appear in about two months, and though of very slow growth, some are now ready for pricking out into separate pots. It is after this that my difficulty begins. Either from mismanagement or from the damp of Devon they perhaps flower once, and then begin to die. I intend next winter to treat them like *Androsaces*, and, while admitting air, to exclude wet and damp by the use of bell-glasses partially raised from the ground. This treatment I intend for *alpina*, *sulphurea*, and *palmata*; *Pulsatilla* requires no special care. "F. W. B." does not mention *A. rivularis*, a pretty plant, and one which increases by self-sown seedlings.—T. H. ARCHER-HIND, *South Devon*.

Double Rockets.—In addition to what Mr. Tymons has said about these, allow me to make a few observations which may be useful to beginners. Rockets cannot be grown in very sandy soil; they do not only like, but absolutely want, a good, rather heavy loam, if expected to grow well for a length of time. The situation should be sheltered from hot sun and parching winds. After flowering I only cut the flowers off, and wait some four weeks before I cut the plants down to an inch from the ground. When some fresh growth is produced they should be supplied with some good soil, to which they will take readily and make fresh roots when the autumnal rains set in. About September they may be taken up and divided into as many bits as possible, provided some roots are attached to each piece, which, if replanted at once, will bloom well next year. This is exactly Mr. Tymons' method, only by my plan making cuttings is done away with, thus simplifying their culture. Before winter sets in a dressing with half-rotten manure will be found to be beneficial in protecting the tender roots and in strengthening the plants. The French white sometimes sports to a pale purple or mauve colour.—MAX LEICHTLIN, *Baden-Baden*.

Columbines.—I am not at all surprised at "J. C. C." (p. 486) not being able to get *Aquilegia cœrulea* true, as nearly all plants of it which are distributed are raised from seed, and Columbines are very sportive, too much so, unfortunately, especially as regards this lovely species, as the danger is it may not be kept true, and any degeneracy or change of colour (it could not well be improved) would be much regretted by all who know or have seen it in bloom. The only way to preserve its true character is to isolate the plants that are intended to bear seed, or have it saved from, as when anywhere near others, the bees are sure to carry the pollen from flower to flower and inoculate all, and their doing this accounts for the great variety of colours and forms one soon gets in a garden where many are grown. "J. C. C." is fortunate in not having his plants of *A. cœrulea* die away, as they provokingly do in most places, and here, where our soil is light and where most other sorts do well, we cannot keep them more than three or four years. I doubt also if they are as deep in colour and

good as they were, but the cold, dry season may have had something to do with this, as Columbines like a moist genial atmosphere; they improved wonderfully immediately after the rain and the warm, damp air that followed. It is somewhat surprising that as the generally-considered delicate *A. cœrulea* does so well with "J. C. C." he should have any difficulty with the more robust *A. glandulosa*, but the insects he mentions as attacking the crowns are probably the cause of his failure. I think if he were to try a dressing of soot and lime (my panacea for insects), he would find it do much good, as sprinkled or thrown over the crowns it not only wards off such enemies as attack plants, but it acts as a stimulant, and does in that way a great deal of good. To be effectual the lime should be fresh and air-slaked in a dry shed, as then it is much more caustic and strong.—S. D.

NOTES OF THE WEEK.

Gardeners' Royal Benevolent Institution.—The forty-first anniversary dinner of this institution was held on Wednesday evening last, at The Albion, Aldersgate Street. Mr. George Lambert, F.S.A., occupied the chair. After the usual toasts several gentlemen spoke in the interests of the institution, of the good it had done and is still doing, and strongly urged every one connected with gardens and gardeners to support it. Then followed the secretary's report and the statement by the treasurer, who announced that the total subscriptions of the evening amounted to upwards of £1000. The chairman's list amounted to £330, and that of the treasurer to £50. Towards this amount the chairman subscribed 100 guineas. This festival was in every way the most successful that the institution has yet held.

Hardy flower exhibition.—It has long been a complaint that at London exhibitions hardy flowers were not shown in good condition even by those who grow them well, but, true as this may have been in the past, there has surely been exhibitions of hardy flowers at South Kensington this season fit to satisfy everybody. First, there was that grand show of the *Narcissus* family in April, and since then almost without interruption there has been a continual feast of hardy flower beauty provided in the conservatory at South Kensington, and the display will, we understand, be continued until the autumn. It is evident that an entire reaction has set in with regard to hardy flower showing, for not only have the habitual exhibitors shown this year, but outsiders have also caught the infection. In addition to the well-known names of Ware, Barr, and Hooper we have those of Veitch, Kelway, and Walker, all of whom have seemingly striven to outvie each other in the extent and interest of their displays. There probably never has been such an extensive exhibition of hardy perennial flowers as that which Mr. Ware has made at South Kensington during the past few weeks from his nursery at Tottenham. It well shows what a wealth of beauty there exists in this class of plants. We understand that the display from Mr. Ware's nursery will be maintained at South Kensington throughout the season.

The Edinburgh International Forestry Exhibition was formally opened on Tuesday last by the president, the Marquis of Lothian. It promises to be of vast extent and thoroughly representative of the object to which it is devoted. It is as yet, however, in a very incomplete state, and will probably be so for some time, as many of the foreign exhibits have not arrived. The buildings and other works are, however, finished. Among the principal home exhibits are some fine specimens of English timber, chiefly of Oak, from the forests of Windsor and Dean, including a slab of Herne's Oak. There are also numbers of logs, showing the effects of cutting off branches close to and at a distance from the main stem. From Morton Hall there is an elegant library table, showing a charming combination of home-grown woods. In the construction of this piece of furni-

ture it is said that no fewer than 10,000 pieces of wood have been used, consisting of 117 different varieties. The Madras Forest department exhibits a valuable collection of gums and resins, and there is also a fine collection of polished timber belonging to the Andaman and Nicobar Islands, sent by Col. Cadell. The Maharajah of Johore sends many fine specimens of timber, both in a natural state and manufactured. Among other exhibits the most complete are those of Denmark and Norway. Besides specimens of Pine and other kinds of timber, this section contains models and pictures of methods of lumbering. The Cape Colony, New Brunswick, and Californian exhibits are also in position. These include a gigantic shell trunk of a Californian red-wood tree. Being 40 feet in circumference and 12 feet or 14 feet high, the interior of it makes a goodly-sized room. Amongst open-air exhibits is a model of the Queen's Balmoral chalet, built of the finest Scottish Fir, and numbers of rustic houses and conservatories. The Lawson Seed Company; Messrs. Little and Ballantyne, Carlisle; Dickson and Sons, Chester; Veitch and Son, Chelsea; and other nurserymen have had large plots allocated to them in the open field west of the main building. These spaces they have planted with ornamental trees and shrubs.

ORCHIDS.

Anguloa eburnea.—A flower of this rare and chastely beautiful Orchid has been sent to us by Messrs. Thomson, Clovenfords, who rightly think highly of it. It is one of the purest white Orchids in cultivation, there being not a trace of colour in the flowers, and on account of the solidity of the sepals they have the appearance of being carved out of ivory. In habit of growth it resembles *A. Clowesi*, *uniflora*, and others.

Odontoglossum vexillarium.—A series of beautiful varieties of this Orchid come from Dr. Paterson, Bridge of Allan. They differ from each other chiefly in the depth of colour, some being almost pure white, others a very deep rose, while others again have extreme light and dark shades represented in the same flower, and one is particularly remarkable for the large size of the labellum, which measures 3 inches across.

Coryanthes maculata punctata.—A flower of this singular Orchid has been sent to us by Mr. Macdonald, of Woodlands House, Perth. In addition to its being spotted, as in the typical *C. maculata*, the flower of *punctata* is covered with minute dots. The curious formation of the labellum, somewhat resembling a pouch, is the most remarkable part of the flower, which is otherwise similar to that of a *Stanhopea*.

Dendrobium chrysotoxum superbum.—This variety is much superior in every respect to the typical form, the flowers being larger, the colours brighter, and the spike generally more floriferous. A remarkably fine spike of this variety, carrying fifteen flowers, has been sent to us by Col. Charlton from his garden in the Isle of Man, and from the same collection come flower-spikes of *D. Calceolus*, one of the oldest and best known of *Dendrobiums*, and still one of the handsomest.

Cattleya Gaskelliana.—We have received several flowers lately of this new *Cattleya*, which appears to be flowering simultaneously throughout the country. Among the flowers received is one from Mr. J. Waddell, Shenley House, Bletchley. This flower may be best described as being intermediate between *Cattleya Warneri* and *C. Mossiae*, the sepals a deep lilac, the lip frilled and light at the margins, and rich, clear, yellow throat, and a large blotch of the richest amethyst on the lobe. From what we have seen of the flowers sent to us and those we have seen lately in Mr. B. S. Williams' nursery and Mr. Lee's garden at Downside, Leatherhead, we gather that this *Cattleya* is as variable as the other new *Sanderian* *Cattleya*, viz., *C. Percivaliana*. One or two of Mr. Lee's varieties now in flower are superb, while others are poor forms.

The chief value of this *Cattleya* will be on account of its flowering after the *Warneri* forms are past and before the autumn *C. labiata*, thus filling the gap in the *Cattleya* flower season.

Broughtonia sanguinea.—Of this uncommon little Jamaican Orchid Mr. Soper sends us a flower-spike from his garden in the Clapham Road, where he grows it very successfully on suspended blocks in a warm moist house, in which *Aerides*, *Vandas*, and other warm-house Orchids thrive to perfection. It is a very neat and pretty Orchid, with flowers about an inch across, of a deep rose-purple finely pencilled with deeper lines, and with a yellow centre. As the spikes are slender and droop gracefully, the plant has a pretty effect in an Orchid house.

Purple Maxillaria Harrisoniae.—A very remarkable variety of the well-known *Maxillaria Harrisoniae* has been sent to us by Mr. Walker, Southampton Lodge, Oakleigh Park, Barnet. The flowers of this, instead of being of the ordinary whitish colour, are of a uniform violet-purple or rather plum colour, except the labellum, which is darker. They differ also somewhat in shape, the spur being much more attenuated than usual. This is quite as remarkable as the pure white variety sent to us a few years ago by Messrs. Thomson, of Clovenfords.

White Cattleya Gaskelliana.—Mr. D. B. Crawshaw, of Rosefield, Sevenoaks, writes to say that he has a white variety of the new *Cattleya Gaskelliana* in bloom, which, if as large and finely shaped as other flowers of this *Cattleya* which we have seen this season, must be a lovely variety. Mr. Crawshaw also states that he has now a gorgeous *C. Sanderiana* in bloom, and he sends us one of the largest and finest flowers of *C. Warneri* we have seen, the flower being some 8 inches across, with deep lilac sepals and a most beautifully coloured lip.

Cattleya gigas imperialis.—An exceedingly fine bloom of this gorgeous *Cattleya* has been sent to us by Mr. H. W. Elliott, of Selly Oak, near Birmingham. It is $8\frac{1}{2}$ inches across the sepals, which are very broad and of a deep rose-pink. The lip is very fine, being $2\frac{1}{2}$ inches across, of an intensely deep maroon-crimson, frilled and lighter coloured at the margins, and with a large blotch of pale yellow in the throat. This imperial variety is indeed a splendid Orchid when represented by such a bloom as this. A late-flowering form of *C. Mendeli* is likewise sent.

Odontoglossum vexillarium.—The culture of this queenly Orchid is seemingly well understood by Mr. Douglas, of Great Gearies, Ilford, judging by the specimens which he sends—the produce of one small bulb. These consist of four spikes, carrying in the aggregate twenty flowers, representing a large-flowered form of good colour. Mr. Douglas also has a plant of this Orchid bearing no fewer than 140 flowers—a grand specimen. He also sends a very dark crimson blotched form of *O. Roezli*, as well as the lovely white form.

Eulophia scripta.—Flowers of this uncommon and pretty Orchid have been sent to us by Mr. White from Mr. Dorman's collection, Laurie Park, Sydenham. They measure three-quarters of an inch across, and are heavily blotched and spotted with brown on a yellow ground. The flower-spike is invariably branching, and Mr. Dorman's plant carries a spike with fifty flowers upon it. Accompanying the specimens of this Orchid is a flower of *Odontoglossum crispum* with two lips, a curious monstrosity, and two forms of *Epidendrum vitellinum*, one flower representing the typical species, the other the large variety *majus*.

Odontoglossum Pescatorei var.—A sixteen-flowered spike of a most remarkable variety of this Orchid has been sent to us from Mr. F. Yates' garden at Higher Feniscowles, Blackburn, by Mr. Newsham, his gardener, who states that the plant has been in flower for the past five weeks, and has therefore lost a good deal

of its colour. It is certainly an uncommon variety, almost as remarkable as the varieties *Veitchianum* and *Schroederi*. The flowers are above the average size, and each of the sepals are profusely blotched with plum-purple on a white ground, as is also the broad labellum. An appropriate name for it would be either *guttatum* or *pardinum*, as it is assuredly worth a varietal name.

Cypripedium spectabile.—I send you some cut flowers of this Lady's Slipper taken from the same plants as in former seasons. If a fair start is made with this *Cypripedium*, there is no more difficulty in flowering it well year after year than in the case of any other herbaceous plant. Peat and sand, a moist situation, and shelter from wind are the only essentials; some may fancy a little shade for it, but that does not matter if the roots are kept moist. Until just lately a fair amount of Grass and young Bracken was allowed to grow amongst about a score of plants of it, but these are giving place to a spreading patch of the dwarf *Equisetum*, which, it is hoped, may not only keep the roots cool and help to hold up top-heavy growths, but be in harmonious contrast with the heavy-looking foliage. Caterpillars are apt to take possession of the soft-folded foliage of these Orchids if not watched and dislodged.—J. WOOD, Woodville, Kirkcaldy.

* * Very fine specimens, ranging from 15 inches to 2 feet in height, and furnished with large, highly-coloured flowers.—ED.

Lilies and Orchids from Liverpool.—I send a flower-spike of *Lilium rubescens* (*Washingtonianum purpureum*) with twenty flowers on it; I have others with as many. I also send a flower-spike of *Epidendrum bicornutum*, one of three on the plant; the spike has had altogether thirty flowers—that is, sixteen which have flowered and faded, beginning at the bottom, and eleven flowers and three buds now on it. This habit of gradual opening of the flowers makes this beautiful species very useful. The spike which I send began to open at the end of April, and if not cut would doubtless have outlasted the month of June. The dry sunny season has been very favourable to *Cattleyas* flowering, and in the open ground it has been favourable to some Lilies, but not to others. For instance, *Lilium auratum* is very fine, several flower-spikes having thirteen and fifteen buds, and the stems of great thickness and about 5 feet 6 inches high, planted in fine peat, but without shade, which is unnecessary in this climate except a few low-growing plants to shade the ground. On the other hand, *Lilium pardalinum* is not growing so tall as usual. We have one fine clump consisting of about eighty flowering spikes which are now only from 5 feet to 6 feet high. Last year they grew to 7 feet or 8 feet. Most alpine and herbaceous plants have done better in the drought than usual, but have required watering. Pansies and Columbines have suffered, also all kinds of *Primula*.—E. HARVEY, 12, Riversdale Road, Aigburth, Liverpool.

* * The Lily sent by Mr. Harvey was a remarkable specimen. The flowers were arranged in loose tiers, about five being on each whorl. When developed so finely as this was, this is one of the most beautiful of all Lilies, and one which possesses a beauty peculiar to itself, inasmuch as no other kind has such a variety of tints on the same spike. *Epidendrum bicornutum*, too, is rarely seen in such fine condition as that represented by the spike sent to us by Mr. Harvey, who evidently knows the requirements of this species, which is reputedly difficult to grow and flower successfully. The spike in question carried no fewer than sixteen flowers, arranged in a rather dense, rounded spike, on which there are scars indicating fallen flowers, making in all twenty-nine. The pure white wax-like texture of the flowers of this *Epidendrum* renders it one of the loveliest of all Orchids, and the minute dots of purple with which the flowers are copiously marked add much to their beauty. This species is successfully grown and flowered at Kew, but this is the only place about London where we have seen it really finely flowered.—ED.

FRUIT GARDEN.

STRAWBERRIES FOR NEXT YEAR.

THERE is not so much difficulty in obtaining a fair crop of Strawberries the first season as some imagine. The only thing required is to get plants as early as they can be had. I do not mean to say that a full crop need be expected the first year; but if the beginning is right and the soil suitably prepared, a fair measure of success may be reaped. We must bear in mind, however, that some soils are more favourable to the growth of Strawberries than others; therefore, equal success must not in all cases be looked for. The first step is to secure the plants, which should be obtained from the earliest runners, and no time must now be lost in setting about the work. Runners laid in pots make the best plants. Get some 4-inch pots, fill them with good loam, and place a runner in each pot; lay a stone on the runner to keep it in its place, and remove the point beyond the pot. The soil in the pots must have water as often as it gets dry, which will be every day in dry weather; any neglect in getting the plants rooted as quickly as possible will tell unfavourably later on, and the plants will make but slow progress if their roots are in a dry soil. In about three weeks the layers should have sufficient roots to enable them to be removed from the parent plants, and in doing this they should be cut off close to the pot; they should then be placed in a cold frame or in some other shady situation until they can bear full exposure to the sun. Four or five days ought to suffice for this hardening process, but such plants as are deficient in the way of roots may remain in their shady quarters a few days longer.

VARIETIES—It is not difficult to name a dozen good varieties, but it is not so easy to make a selection that will suit all situations, as it is well known some sorts grow and fruit better in some soils than others; the selection must therefore, to some extent, be left to the reader. I will, however, name a few sorts likely to suit most kinds of soils and positions. For the earliest crop Black Prince is still unsurpassed; it is very hardy and almost a certain bearer. I have grown this variety for more than twenty years, and I have never known it to fail; its greatest drawback is its small size. Keen's Seedling is next in point of earliness; it produces large fruit and is a good bearer. Sir Joseph Paxton is perhaps the most popular Strawberry grown; its fruit is both large and handsome. Vicomtesse Héricart de Thury is an early and a deservedly popular kind. The best mid-season sorts are President, Dr. Hogg, Sir C. Napier, and British Queen. In the ferrugineous soils in the wealds of Sussex I have seen the British Queen thriving in the most satisfactory manner, and under such conditions it is undoubtedly the best Strawberry in cultivation. For the latest crops the selection may include Frogmore Late Pine and Elton Pine.

THE PREPARATION OF THE GROUND should be of the most substantial character. It should be trenched 2 feet deep where the staple is sufficiently deep to allow of the bottom soil being brought to the surface, but where the lower stratum is crude and heavy it had better be left at the bottom, but well stirred up as the work goes on. In soils not already rich in manurial matter plenty of well-rotted manure should be added, taking care that a good layer of it is placed 6 inches or 8 inches below the surface to induce the roots to get down out of the way of drought, for although the Strawberry is not naturally a very deep-rooting subject, it will find its way down out of the reach of an ordinary dry time if the lower layer of soil is well moved and manure is incorporated with it. In dry sandy soils manure should be used sparingly; clay or a good mellow loam laid on the surface 4 inches thick and mixed with the staple will be more beneficial than the best hotbed manure. For all light soils cow manure is more suitable than that from stables, being cooler.

THE PLANTING OUT should not take place later than the second week in August, but if it can be

done earlier, every day gained will be an advantage to the crop. If the ground has been recently prepared, it will be desirable to mark out the rows and well tread the space which the plants are to occupy. As a matter of course it is best to plant in dull weather, and when the land is neither too wet nor too dry, but if the plants have plenty of roots when put out, and receive water afterwards as often as they require it until they get established, there is no need to wait. The distances at which the plants should stand apart will depend a good deal on the character of the soil. In general Strawberries are too much crowded to secure fine fruit; in strong soil the rows should be 30 inches apart, and the plants 18 inches asunder in the rows, with the exception of Black Prince, which may be 18 inches apart each way.

THE AFTER-MANAGEMENT should consist in renewing a portion of the stock every year, as young plants always produce the largest fruit. When a plantation has stood four years on the same ground it should be destroyed. In light dry soils a fork or spade should never go near the beds; hand-weeding or a Dutch hoe to cut up the weeds is the heaviest implement that ought to go near them, and as far as possible all runners should be cut off as fast as they are made. Every autumn not later than November a layer of rich manure should be spread on the surface between the plants, and early in April all Strawberries growing in light soils should have the surface between the plants well trodden to make it firm for the roots. I know of an instance in which this annual treading has turned comparative failure into complete success. In fact, excellent crops are now produced every year where there were only insignificant crops before, and these only in the wettest of years. To keep the fruit clean and free from grit I find long litter laid between the plants in April the best material to use for that purpose, and I think short Grass from the lawn about the worst, as it adheres to the fruit in wet weather. In regard to watering, no crop repays attention better than Strawberries. The present season has given good proof of this, for the long drought which we have had has converted what in an ordinary season would have been a full crop into a very poor one, *i.e.*, where the plants have not been attended to in regard to root moisture. In our own case we have neglected other work to keep the watering-pots going, the result being that the plants have been able to swell off the first set of fruit to a good size, and a fair proportion of the remainder also promises to be good; but notwithstanding all our labour the crop will not be so large as it would have been had we had more rain during the early part of June. J. C. C.

PROTECTION OR NO PROTECTION?

"J. S. W." seems to cling to the belief that the cold-resisting power of bloom or newly-set fruit is no greater in the case of trees treated in a way best conducive to the formation of fully-ripened wood the year previous than in that of trees managed in a way less capable of securing the maximum amount of solidity in the young wood. "J. S. W." says that the amount of frost which will destroy the flowers of the native Gooseberry will kill those of all other hardy fruits, a circumstance well known, but this is putting the matter wrong end first. Apricots and Peaches, the fruits in question, are indigenous to parts of the world where there is less cold than they have to contend with in this country, and their flowers are in the same degree more tender. "J. S. W." says a given amount of cold will kill the flowers of all fruits alike. But frost that will kill the bloom of Peaches will not kill that of Gooseberries. I know to a certainty, from the fact of Gooseberries grown on a vacant space on a Peach wall carrying a full crop when the Peach bloom was all killed, both being in flower at the same time. I have frequently, too, seen places where the Peach crop was killed when Gooseberries in a much less favourable position escaped. If anyone required convincing that "J. S. W." is wrong in asserting that Gooseberry bloom will

bear no more frost than that of Peaches, I can give an instance that proves it. Within a short distance from where I write there are several Peaches that have been planted out in an open garden, with big, bushy heads a dozen feet through; they have been large enough to bear for ten years, and every season are full of bloom, yet all the bloom has been killed each year during the time named but one, and then there was not a score of fruit on the whole; whereas the Gooseberries in the same garden, many of which are growing within a few yards of the Peaches, have every season borne fruit enough to weigh their branches to the ground. Can better proof be obtained that Peach blossoms are more tender than those of the Gooseberry?—T. BAINES.

I am glad to find that my short note on no protection (p. 461) has been the means of eliciting so much valuable correspondence, which in the end must do good. In my own case it would be a very expensive affair to protect our best Apricot trees, as they are trained to a wall 18 feet high, and being in an exposed position the material used would be a constant source of trouble. When I took charge of the gardens here in September, 1882, I found most of the wall trees in a very rough condition. Some of them apparently had not been touched during the summer, and some had spurs projecting from the wall over a foot in length, rendering the wall almost useless to the trees. My method of mending matters has been very nearly that advised by "J. G. H." (p. 512), the result being that we had a plentiful crop of fruit on both Apricots and Plums. Trees so treated afford in a great measure their own protection, as the stronger branches shelter the smaller and weaker ones, thus enabling one to dispense with costly glass copings. Where it is absolutely necessary to use the latter I think it would be cheaper to erect unheated houses, in which a crop of the tenderer kinds of hardy fruits would be assured.—WM. WILKINSON, *Elloughton Lodge, Brough.*

In the remarks I made (p. 492) on protecting Peach trees in spring, I did not mean it to be understood that protection itself was a direct preventive of insect attacks, as Mr. Baines implies, but that protection assists the trees to make healthful growth—in itself the best means of warding off insect attacks.—W. WATSON, *Eaglehurst.*

Thinning and shouldering Grapes—Permit me to tell Mr. Bristole (p. 470) that the roofs of the vineries here are so steep, that not only Alicantes, but many other kinds of Grapes, such as Venn's Black Muscat, Muscat of Alexandria, Mrs. Pince, Raisin de Calabre, Lady Downes, Black Hamburg, and others, have some of their shoulders above the level of the nearest wire, and in such positions that neither the wire itself nor any cross matting can be of any use in shouldering. Now, I do not wish to increase the length of stem between the fruiting lateral and the shoulder, as I have always understood that in the opinion of good judges, shortness is a point in favour of the cultivator. I can assure Mr. Bristole that the sticks used in shouldering are by no means difficult to remove when the bunches are required for use. I simply grasp them with the scissors and take them out in the same way in which they are put in, or if jammed in any way, I snip them in two and remove each piece separately.—JOHN C. TALLACK.

Apples as ornamental trees—I have been much interested in the observations of your correspondents on the subject of ornamental Apple trees in your May numbers. These I have only seen on my return from the Mediterranean through Switzerland, where my enthusiasm for fruit trees as garden ornaments has been again aroused by the beauty of the fields in consequence of the standard Pear and Apple trees which adorn them. I gather from the valuable communications of your correspondents that those who care as much for grace and picturesqueness in the Apple tree itself as for beauty of blossom and perfection of fruit cannot do better than plant the Orange

Goff or Blenheim Orange. If, however, it is wished that these other requisites should have full consideration—and the last, that of fruit bearing, it would, of course, be folly to overlook—the trees most to be desired are the Keswick and other Codlins as early bloomers; Court Pendu Plat as a late flowerer; Hambledon Deux Ans or Pyle Russet, Sioux Pippin, Trosley Pippin, Hawthornden, Lord Suffield, and Sharp's Apple. There is one point of great importance to those who wish to introduce Apple trees on their lawns, but which your correspondents do not appear as yet to have touched upon—viz., to what extent and for how long it would be necessary to put up with the bare turfless earth under each tree. Another point is the proper distance which the finest and more freely growing trees should be kept apart in order to ensure their perfect development.—A. W. T.

NOTES.

Aquatic plants are now becoming more generally appreciated, and this is especially true of the small-growing kinds. *Salvinia natans*, *Azolla* (pinnata) *caroliniana*, *Trianæa bogotensis*, *Pistia stratiotes*, and *Myriophyllum proserpinoides* are all worth a place, and may all be easily grown in small pans or inverted bell-glasses in a stove temperature. During the summer months the *Azolla*, *Salvinia*, and *Myriophyllum* grow freely enough in tubs or sheltered open-air tanks. A friend to whom I gave *Salvinia* last season, used it with excellent effect as a substitute for the sprig of flower or leaf in finger-glasses. And they may all be grown during the summer months in a bowl in the drawing-room window.

Ouvirandra fenestralis is well known as one of the most rare and curious of all aquatics. Its cultivation, however, is not always a success. The following are, I think, essential to its well-being: 1. Pure soft rain or river water. 2. Pure fibrous peat, and a little silver sand as compost. 3. A pot as small as possible. 4. The water to be refreshed twice daily, morning and evening, by watering overhead with a fine-rosed waterpot. 5. Dense shade; direct sunlight is fatal by browning the leaves and favouring the growth of confervæ. 6. An opaque-sided pan or slate tank to grow it in. 7. Temperature of water never below 60°. 8. A large body of compost at the bottom of the pan or tank is bad, as when planted out in this it is difficult to remove the plant if the earth around it becomes vitiated or sour. Our plant is re-potted five or six times a year, the water being then thoroughly renewed and the pans cleaned thoroughly. So treated it grows freely year after year.

Bomareas are deserving of a word of praise. As warm greenhouse plants they are alike beautiful and serviceable. In general habit of growth and form of flower *Bomarea Carderi*—one of the best—is singularly like the *Lapageria*; but instead of being shrubby, *Bomareas* are climbing, soft-wooded plants, nearly related to *Alstroemerias*, but far more luxuriant. Grown in large pots, or planted out in a border of good loamy soil, they grow freely; and once well established afford a profusion of their rosy, bell-shaped flowers. Some of the newer kinds—as *B. Carderi*, *B. conferta*, and *B. Shuttleworthi*—are excellent roof-climbers, and deserve a place wherever choice climbing plants are admired. *B. conferta* is a noble object, as seen strong and healthy, bearing a pendent mass of twenty or thirty crimson-red blossoms. They do best when planted out in good loam and peat in an intermediate temperature, and so treated rival even the *Lapagerias*.

The Sultan's Balsam.—Of new decorative plants, one of the prettiest and most useful is *Impatiens Sultani*. It flowers freely, and is remarkably easy of propagation and culture in a warm house. Even the cuttings keep on flowering; and quite small plants 6 inches in height are gay with bright rosy flowers, each the size of a shilling. I saw it used in a very effective manner the other day as a front row to a group of flowering Orchids.

Dwarf plants of it were arranged alternately with those of *Pilea muscosa nana*, and the effect was singularly pretty. By keeping up a stock of young plants, which is most easily done, it may be had in flower all the year; but it is during the autumn and winter months that its bright rose-coloured blossoms are most effective and useful. Those who have it not should make a note of it at once as a "good thing."

The Tree Pæony.—How is it that the now numerous and beautiful varieties of *Pæonia Moutan* are so seldom seen in our gardens? Apart from its use as a half-hardy perennial, too, this *Pæonia* deserves attention for pot culture, and, for the spring or early summer decoration of the warm greenhouse or conservatory, I know of no other plant, excepting the Rose itself, which is so beautiful and at the same time so fragrant. This plant is said to grow wild in Northern China, and is largely cultivated by the Chinese florists, who have raised numerous very distinct seedling varieties. Other very handsome seedlings have been raised in this country, and also on the Continent, especially at Ghent; so that a good collection may now be formed of nearly all shades of pink, flesh, purple, straw colour, yellow, crimson, and white, and some of these are very delicately perfumed. It is difficult to imagine more attractive pot plants than these, and their culture is as simple as that of an *Azalea* or other Chinese shrub.

Hardy plants for forcing.—There are a good many sides to the hardy plant question, and one well worth looking at is their importance and adaptability for forcing into bloom early in the year. Hyacinths, Tulips, Crocus, Lily of the Valley, Solomon's Seal, Tea Roses, Lilac, *Deutzia*, *Spiræa*, *Narcissus*, *Scilla*, *Helleborus niger*, *Tree Pæonias*, and many other things equally familiar are perfectly hardy. Seeing that hardy plants are so adaptable, the question naturally arises whether we make the most of them in this way. There is a desire for variety abroad, and those who would profit most by it should keep an eye on hardy bulbs and experiment on their forcing qualities.

Cape Pondweed.—*Aponogeton distachyon* is not uncommon in good gardens as a hardy aquatic plant. We force a dozen or two of its Artichoke-like tubers every winter, and find them a great addition to the winter blossoms of the intermediate house or conservatory. Pans of earthenware 2 feet in diameter and 8 inches in depth hold three tubers. We plant in sound, lumpy loam surfaced with sand. A layer of loam 3 inches thick, covered with half an inch of sand after the tubers are planted, is ample, after which fill up with clean water to the rim, and keep it fresh by raining a pottle of water over the pan every morning. We plant early in November, and have plenty of flower-spikes from Christmas until April. In May we place the plants under a warm south wall, emptying out the water, and here, exposed to air and sunshine, the earth is baked dry. The tubers thus are induced to rest from May until planting time, and start into growth as readily as Roman Hyacinths. Having a quantity of small tubers the size of Walnuts, we this season tried some of them in 6-inch pots, three tubers in each. The pots were placed in saucers, and the loam was kept saturated by watering overhead; thus treated in a temperature of 45° to 65°, they have flowered well, from seven to fifteen spikes being fully expanded at once. For permanent results and large, well-developed spikes for cutting, however, pan-culture in water is best; and to all who have to provide choice and uncommon flowers for finger-glasses or vases in the drawing-room during the winter months I can confidently recommend this charming water weed. The drying-off or baking process is, however, very essential in order to obtain a good simultaneous development or crop of spikes and fresh green leaves at the desired season.

Ramondia pyrenaica.—This is just now one of the gems of our collection, growing in a pocket between two granite boulders on the top of a low brick wall. It has at times been so dry that its leaves have looked like old leather, but now

since the rain has come it has spread out new foliage, and fairly bristles with its sturdy spikes of lilac or lilac-purple Potato-like blossoms. We find this plant rather variable in habit, length of spike, and in depth of colouring. Our best form above alluded to came from Biarritz—I think it was along with *Asplenium septentrionale*, and both were the gift of Mr. Neill Fraser, of Edinburgh. Growing on a low wall top, the plant is fully exposed to winds and morning and evening sunshine, but the hottest of midday sunshine is warded off by the overhanging branches of a spreading Chestnut tree. The Vernal Sandwort (*Arenaria verna*) sent from Matlock by Mr. Wolley Dod is also firmly established on the same wall and flowers very freely every year. VERONICA.

GARDEN FLORA.

PLATE 447.

STREPTOSOLEN JAMESONI.*

A BEAUTIFUL summer-flowering plant for the cool greenhouse, and one which will doubtless soon become popular because of its usefulness and its free-growing and free-flowering character. Although to many this plant will appear to be a new introduction, it was cultivated in various gardens in this country some 35 years ago, when it was made known through Messrs. Veitch, and figured in several botanical works under the name of *Browallia Jamesoni*. It appears, however, to have been lost soon after its introduction, and, so far as we know, it did not re-appear until about two years ago. A comparison of the accompanying figure with the plate in the *Botanical Magazine*, t. 4605, will show considerable difference both in habit and in the form and colour of the flowers, and these again differ somewhat from the figure in Mier's "Illustrations," upon which the new genus *Streptosolen* was founded. From these facts it may be concluded that the plant is of variable character, a conclusion strengthened by the specimens of this plant in the Kew herbarium. *S. Jamesoni* is the only species of the genus at present known. For its recovery we are indebted to M. André, who found it in Ecuador in 1882, and succeeded in importing it into France, where it is rapidly becoming a favourite either as a hardy plant in the southern part of that country or as an ornament for the cool greenhouse. In this country it requires the treatment adopted in the management of *Bouvardias*. Cuttings of it strike freely at any time, spring being the most favourable. By striking them early in the year, and growing the young plants on all summer and the following winter, and preventing them from flowering, good shapely specimens may be had, and these will produce an abundance of flower during the following summer. When well managed this plant grows into a compact shrub of about 4 feet in height. The leaves are covered with a downy pubescence, and are arranged alternately along the branches. On first opening, the *Brunfelsia*-like flowers are pale yellow (probably the figure in the *Botanical Magazine* was prepared from a plant with newly-opened flowers), but they afterwards change to a brilliant cinnamon-red. They are borne in dense racemes on the ends of the branches, well-grown plants producing racemes each consisting of between thirty and forty flowers. A sandy loam with a little leaf-mould or rotten manure added is a compost suitable for it.

The genus *Browallia*, to which the above plant has been referred, now comprises only herbaceous

* Drawn in Messrs. Cannell and Sons' nursery, Swanley, March 25, 1884.



annuals, of which several species are cultivated for their showy flowers. *B. elata* is frequently grown as a pot plant; seeds of it are sown in a warm house in July and the young plants are potted singly into 5-inch pots and treated like *Schizanthus*, along with which they are generally grown. The flowers of this species are useful for cutting, as they keep fresh in water for several days. It is also used as a bedding plant and for the front row in the herbaceous border. The flowers are of various shades of blue, and sometimes pure white. *B. demissa* is another useful kind with blue flowers. Other cultivated species are *B. grandiflora*, a stout herb with pale blue Vinca-like flowers, *B. abbreviata*, and *B. speciosa*. All the *Browallias* are natives of the Peruvian Andes. They prefer a light sandy soil.

B.

SEASONABLE WORK.

FLOWER GARDEN.

TOBACCO PLANTS.—Of all annuals suitable for flower borders, and for grouping in masses in the sub-tropical garden, the Tobaccos or Nicotianas are probably the most rapid growers and the most easily raised. They have also the additional merit of being comparatively hardy, and can be planted out earlier than any of the other kinds of plants usually classed as sub-tropical. Seeds sown on a slight hotbed in March, and the young plants potted off singly as soon as they can be handled, and given ordinary frame culture, will be large to plant out in May. The best varieties are *Tabacum* and its variegated variety and *wigandioides*. In good soil all three kinds attain a height of 8 feet, and have broad massive foliage and long spikes of pink blossoms. They flower so freely, that to prevent premature exhaustion, it is necessary to reduce the flower-spikes to about a couple on each plant, as well as to prevent them from seeding, by frequently picking off the bad flowers. Under this simple culture they will retain their effectiveness till very late in autumn. If planted in groups, each plant should not be allowed a less space than 3 feet.

BEDDING PLANTS.—Though it is yet early to form an opinion as to whether or not such tender plants as the *Coleus* and *Alternanthera* will fill out their allotted space, the moment there is a doubt in the matter will be the time to set to work to cover the ground; dwarf *Sedums*, dibbled in amongst them, quickly do this, the mixture so formed being infinitely preferable to bare plots of earth. In the case of succulent arrangements keep the flowers picked off *Echeverias* and other ground-work plants associated with them, such as *Sedums* and *Saxifrages*, but the small flowers of *Mesembryanthemum coridifolium* variegatum harmonise so well with succulents, that they should be left. It will, however, be necessary to occasionally pick off the seed-pods in order to keep the plants in free growth. The most pleasing bed we have at the present time is an arrangement of large succulents, consisting of *Yuccas*, *Agaves*, and large-growing *Echeverias* and *Sempervivums*, the whole being in a setting of the large, mauve-flowered *Mesembryanthemum conspicuum*, and the only attention it has ever had or needed since planting has been the keeping of the *Mesembryanthemum* pegged under the taller plants. In rain or sunshine, in fact, in all weathers, these succulent arrangements are equally pleasing, and worthy of adoption on that ground alone, not to mention their desirability on the score of variety. Keep the under growths of sub-tropical plants neatly pegged down, and in cases in which such undergrowths have been deemed unnecessary the beds should be kept mulched with Cocoa fibre or leaf-soil. For the present the flowers should be kept picked off *Cannas*, *Castor-oils*, and the like, and all that need tying and staking should receive that attention before any injury accrues from its neglect.

GENERAL WORK.—During favourable weather the weeding and rolling of walks will well repay all the labour that can be afforded in that direction. Shrubberies and mixed flower borders will also require more than ordinary attention as to the destruction of weeds, and the mowing necessary to ensure a close, velvety turf is just now incessant. Roses need washing for the destruction of blight; bad flowers should be picked off once a week, and the growths of any that have done flowering should be shortened. Daisies, Pansies, Primroses, Polyanthuses, Violas, Pinks, and other spring flowers may now be propagated by division, cuttings, or seeds; they all do best in partial shade; a border having a north or east aspect is in every way suitable. Any strong plants there may be to spare will do good autumn service in the mixed borders amongst Roses.

INDOOR PLANTS.

DOUBLE PRIMULAS.—The advantages which these possess over the single kinds where flowers for bouquets are much in demand are their greater duration when so used and their continuous habit of blooming, especially the white and distinct pink kinds, such as Gilbert's seedlings, that deserve to be grown extensively; not only are their flowers individually much larger than those of the old sorts, but the habit of the plant is more vigorous. Every attention should now be given them in the way of pot room and plenty of light, with no more shade than is required to break the sun's rays and prevent the foliage from assuming a sickly hue. If seeds of the single varieties were sown at intervals of about two months, there will be a good prospect of a continuous succession from autumn up to spring, and to have the stock in such order as will enable it to produce a full crop of flowers there must be no want of attention, especially in giving more root room as required. Plants of the last sowing should be encouraged to make growth, so as to admit of their being got into their blooming pots before the season is too far advanced to allow them to attain size enough to flower well. On no account allow the stock of either double or single kinds to stand too close together from the first, for where this occurs the leaf-stalks get drawn out weakly, a defect that cannot afterwards be remedied. The best place for Primulas in summer is in ordinary frames facing northwards at the north side of a low north wall with their heads close up to the glass. Thus situated they will get plenty of light, but not under the full force of the sun. The lights should be well tilted up back and front in the daytime, and a piece of garden netting should be put on the glass in the middle of the day when the weather is bright.

HELIOTROPES.—These must be kept close to the glass when subjected to the warmth requisite to bring them into flower during autumn and winter; consequently, where they will have to be brought on in low pits, small plants such as can be grown up from spring-struck cuttings occupying 6-inch or 8-inch pots should at once be placed in such, regularly pinching off the flowers as they appear. This is necessary in order to direct all their strength to the formation of growth. Large old *Heliotropes* are most useful where there are means of giving them the requisite room, as where these exist, if encouraged with a little warmth after the weather gets cold, they will go on blooming for months. With large examples of this description it is not so necessary to keep all the flowers nipped off now as in the case of small ones, but means must be taken to keep them growing freely by the aid of sufficient pot room and frequent applications of manure water.

PERPETUAL FLOWERING CARNATIONS.—The later flowering stock of these will now be in fine bloom, and should be assisted with manure water once a week, which will induce them to push up strong shoots from the bottom that will flower later on. Plants that have been forced early should have their old flowering shoots well shortened back, so as to encourage the young shoots, which in free-growing varieties are always making

their appearance; they should then be turned out of the pots without disturbing the balls of roots more than what occurs in removing the draining, and be planted out in prepared soil, not too light, but with sand enough in it to admit of their being taken up and potted in the autumn without much breakage of their roots; they must have an open situation fully exposed to the sun, and not be allowed to suffer through want of water. If well managed they will produce many more flowers than younger plants, and will not be so leggy or unsightly as where the old stems are allowed to grow up without cutting back. Young plants struck from cuttings in the winter or spring must have all the attention which they require, or it is useless to expect more than a meagre production of flowers. Move them as soon as necessary out of the small pots they occupy to others a couple of sizes larger, using good strong new loam, to which has been added a little leaf-mould with some sand, but not so much as is required by most soft-wooded plants, as if the soil is too light they will not be unlikely to refuse to move altogether.

FRUIT.

PEACHES.—When all the fruit has been taken from the early house, go over the trees and remove the shoots which have performed their office and can now be spared with advantage to the young growths intended for next year's fruiting. Tie in and regulate the latter, allowing plenty of room for free development of foliage and the free admission of light and air. Syringe regularly with pure water where the foliage is clean, and add soft soap or Gishurst compound on dull evenings to keep it clear of spider. Keep the inside borders regularly supplied with water, and renovate the mulching where the trees show signs of weakness or exhaustion from heavy cropping, but carefully guard against forcing them into a vigorous growth when they should be going to rest. The ventilators may now be left open by night and day, and when the buds are well made up, the roof lights, if possible, may be taken off, painted, and stored away ready for use early in the autumn.

SUCCESSION HOUSES.—If time is an object the trees in succession houses may now be subjected to a higher temperature than would have been safe before the fruit commenced its last swelling, but it must be borne in mind that nothing in the way of quality is gained by it, increased size, colour, and flavour being the true tests of merit. We prefer a temperature ranging from 60° at night to 75° by day, with plenty of air and full exposure by drawing the lights off when the weather is very fine after the end of June. Where good soft water can be obtained the trees may be syringed every morning until the fruit has attained its full size and shows signs of changing for ripening, but on no account should the afternoon syringing be performed when there is danger of the foliage remaining wet after nightfall. If the roots are confined to internal borders, and the latter are well drained, liberal supplies of water at the mean temperature of the house will be needful in this and later houses; but where they run outside, heavy waterings, combined with good mulching, will keep them in a satisfactory state.

LATE HOUSES.—See that the wood is thinly and evenly laid in in late houses and wall-cases, particularly where no heating apparatus has been provided for ripening it up in the autumn; pinch the points out of gross shoots where they are likely to rob the fruit or weaker parts of the trees, and elevate all that can be raised to the influence of sun and light as the work proceeds. Syringe well twice a day, leave the ventilators constantly open, and mulch the roots with some non-conducting material to counteract the drying influence of constant currents of air; but guard against the use of over-rich manure, which will force the trees into vigorous growth late in the season.

FIGS UNDER GLASS.—Our early forced trees are now swelling up the second crop of fruit, and a few of the most forward Figs are beginning to ripen. The fruit has been well thinned to insure

good size, and the roots have been liberally supplied with warm liquid to keep the trees in growth. From the first week in June stopping is discontinued, as it is from the young growths now being made that next year's first crop will be obtained. When all the best fruit has been gathered the lights will be taken off the roof, the shoots will be well cleaned if insects are present, and the trees will be allowed to go gradually to rest. In our best house a large tree of Brown Turkey is ripening hundreds of fine Figs. This tree is planted out against a rough stone wall forming the north side of a span-roofed pit. The shoots are trained upwards to the ridge, thence downwards to the south front. The winter pruning consists in cutting away barren shoots which have reached the extremity of the trellis to make room for summer growths, and as these are never stopped, a successional growth of wood and fruit is secured until the time arrives for withholding stimulants. The shade produced by the foliage having caused the stems of eighteen years' growth to throw a complete network of roots over the surface of the old limestone wall, we keep them packed Orchid fashion in the pieces of turf, from the floor line 4 feet upwards, and feed copiously with warm liquid, which is poured on at the top every other morning, or as often as the turf roots and projecting stones show signs of becoming dry. We ought to say the wood never becomes gross, neither does the fruit drop at the usual critical period of its growth, two striking proofs that this heat and moisture-loving tree is most decidedly at home when planted where rich, stimulating food can pass quickly away and the air is not excluded from the roots.

STRAWBERRIES IN POTS.—Young plants intended for early forcing should be placed in their fruiting pots. Small pots, 6 inches in diameter, are quite large enough for the first batch, but for the general stock a larger size may be used with advantage, if only to economise time in watering. See that the fruiting pots are clean, dry, and well crocked, for, much as the Strawberry enjoys a strong, rich soil with plenty of moisture, it soon becomes unhealthy in a pot from which water cannot pass away freely. Pot the plants singly, with the crowns well up above the soil when all is finished, and place them on a hard surface in a light, airy situation convenient to water, and, if possible, free from worms. Avoid crowding the plants together or setting them near trees, as it is important that the leaf-stalks be kept short and stout, and that good single crowns in preference to double ones be thoroughly ripened before the autumn. Water well with water which has been exposed to the atmosphere, and keep the beds of concrete or ashes on which they are placed well moistened, but avoid wetting the tender foliage in bright weather or at any time with water that is colder than the mean temperature of the air. Remove all weeds and runners. Apply lime water if worms gain a lodgment, and rearrange occasionally, as they require more room, and to prevent the plants from rooting into the ground. With many growers it is the practice to avoid the use of small pots altogether by filling the fruiting pots up to within three-quarters of an inch of the rim and then pegging the runners tightly down on the surface. The drawback to this plan is the establishment of a colony of worms during the time the pots are standing on the quarters, and the time occupied in watering in dry weather. The plants, however, make excellent heart buds, which ripen well, and the check which follows shifting from 3-inch pots to fruiting pots is overcome.

ORCHIDS.

EAST INDIA HOUSE.—We find *Odontoglossum Roezli* to succeed best in this house, but in the coolest end, there being a difference of at least 5° between the two ends; our plants of it are placed very near the glass, and when making growth are as freely supplied with water as the cool house species. They have just passed through the flowering period, and are again starting to grow. Some of them were repotted about mid-

winter, and have done well; these will not be disturbed now, but all that were repotted at this time last year will be potted again; the roots should not be disturbed more than what may happen in removing the decayed and sour compost. For these we fill the pots with drainage up to within 3 inches of the rim. They should be cleared from thrips before repotting. Some of the *Cattleyas* grown in this house will now be pushing up their flowers from the recently formed pseudo-bulbs; amongst these we place *C. gigas*, which flowers best when placed very near the glass in the coolest end of this house. *Cattleya Dowiana* requires very similar treatment. It does well with the pots placed inside a basket. *C. superba* is grown in quite the warmest end, but this should be on a block, or, what is better, fastened to a bit of the stem of a Tree Fern. We find *Cattleya Warneri* to succeed better in this house than in a cooler temperature. Our best plant of it has been grown here for many years and always flowers well. Any *Dendrobiums* starting into growth, as many of them do at this time, should be repotted as they require it; give them plenty of heat and moisture, and occasionally syringe them overhead. The smaller-growing species should be placed near the glass; those that are taller will do in the centre or on the side stages. *Saccolabiums* are now beginning to make fresh roots; if any of them require robust setting or repotting it ought to be done at once. These Orchids dislike being disturbed, and if the potting material has become decayed, it may be best to carefully pick it out from amongst the roots and substitute fresh material. They do not require any peat amongst the Sphagnum, but crocks and charcoal are necessary to keep it open. We find it answers well to have dried Sphagnum that has been well washed previous to drying to work in amongst the roots, finishing off with live material chopped fine and that has been mixed with a little pounded charcoal as well as the lumpy portions of it. We always wash the leaves with soapy water before potting.

CATTELEYA HOUSE.—If any *Cattleyas* really require repotting, it should be done now, but were are of opinion that January is the best time for performing the operation. Most of ours are being left until that time. Recently imported plants are dealt with differently. Some pot the plants at once in the usual compost, and as a rule roots are very soon emitted from the base of the last formed pseudo-bulbs. The best way, perhaps, of treating all such plants, including *Lælias*, is to pot them in clean crocks, and as soon as the roots have begun to push, remove some of the crocks and replace them with the usual compost; the roots run into it at once, and before it becomes tainted by repeated waterings. Many new and notable additions are constantly being made to *Cattleyas*, and as there is always much pleasure in watching the development of new forms, it ought not to be forgotten that as a rule flowering sheaths are most likely to be formed when the plants are placed near the glass. We had six plants of *C. gigas* in one house placed on the stage; they were not more than 3 feet from the glass, but not a flowering growth was formed upon one of them until they were all suspended from the roof close to the glass; now they are all forming flowering sheaths. *Odontoglossum hastilabium*, an inmate of this house, is usually much punished by the long time during which its flowers remain on it. We have had single spikes last for three months and longer; one even lasted six months. Carefully attend to the plants in the way of giving water at the roots, and maintain a moist growing atmosphere. They are now making new growths and pushing out young roots.

COOL HOUSE.—The instructions recently given as to the general treatment of this house will do for the next two months. We have not had very hot weather, consequently no extra precautions have been necessary; indeed the rather cool, moist atmosphere has suited the occupants of this house well. We would rather not repot many of the *Masdevallias* and *Odontoglossums* at this season, but it may be necessary to do so; in that case

we are careful to disturb the roots as little as possible, and are also very careful not to let them suffer from want of water afterwards. Cool house Orchids are rapidly increasing in numbers and interest, and the house need not be altogether filled with *Odontoglossums* and *Masdevallias*; a few of the finest *Dendrobiums* may find a home there. *D. Jamesianum* and the nearly allied *D. infundibulum* make the best growths in the warmest end of the cool house; in potting and watering deal with them much the same as is done with *Odontoglossums*; they like to be near the glass. Besides *Oncidium macranthum* alluded to in last calendar, another really pretty species does best in this house, at least during the summer months, viz., *O. cheiroporum*; it is best grown in pots, but the pots may be placed in baskets and suspended from the roof. Amongst *Cattleyas* the lovely *C. citrina* succeeds well on blocks or in shallow pans. In either case it is best suspended from the roof. *Lælia majalis* and *L. autumnalis* are good subjects for this house. They will do very well if they can be placed in a corner where they can get a few hours' sun each day, as they will not form flowering growths if they are too closely shaded. Cultivators know that certain plants must be placed in the lightest part, others near the ventilators, and others again at a distance from both. To grow Orchids well in any department it is necessary that their habits and the conditions under which they are found in their native habitat should be known and, if possible, adhered to when under cultivation.

KITCHEN GARDEN.

KEEP the hoe constantly going among growing crops, and prick out Broccoli, Savoys, and winter greens. If ground for them is not likely to be early at liberty we always sow as late as possible, so that the plants do not get drawn while they stand in the seed beds. Early Potatoes now occupy the ground where we intend to plant our spring Broccoli; therefore, with us pricking out the plants will be a necessity, otherwise we prefer planting from the seed bed. Keep Tomatoes well nailed to the walls. Encourage them to become strong healthy plants, so that their fruit may be a sure and profitable crop. On Globe Artichokes recent winters have left their mark, but last two winters being mild ones have helped them wonderfully. We are well watering our stock of these, and will not forget to duly protect them next winter. All Celery for late spring use should now be pricked out. Keep early Celery in the trenches growing by giving it daily a slight damping. It should be kept constantly growing.

TREES AND SHRUBS.

The white Broom.—Few shrubs are more effective at present than this Broom. Planted singly or in clumps with a dark background, and at a proper distance from drives or roads, it looks well, the quantity and continuity of its flowers being all that could be desired. It has one fault, viz., a loose, straggling habit of growth which, however, may to some extent be rectified by planting closely and in large masses. It is quite hardy, of easy culture, and succeeds well in an ordinarily good soil and situation.—A. D. WEBSTER.

Benthamia fragifera.—I enclose a sprig of *Benthamia fragifera* sent to me by Mr. Rogers from his nursery, Red Lodge, Southampton. The tree is 16 feet or 18 feet high, wide-spreading, and bushy; it has been growing there twenty years, and has never flowered before; the fruit, which should follow, is first lilac and then red and something like that of an *Arbutus*, but larger. Mr. Rogers has also in his nursery now a very fine *Araucaria imbricata* covered with catkins, not cones, hanging down in clusters; another has large cones standing up at the ends of the branches. Last winter has helped many rare and tender plants to flower and show what they are,

and the climbing Roses are masses of flower in the tops of high Fir trees.—B., *Bassett Wood*.

KITCHEN GARDEN.

EARLY PEAS AND THEIR CULTURE.

I AM tempted to make a few remarks on Peas, and especially early Peas, because in many places it is just as important to have a good succession of Peas as it is to be able to grow Orchids properly. I have been turning over the pages of McIntosh's "Practical Gardener," published in 1828, and I must admit that we have not learned a great deal in the way of improved cultivation since that time. We have, however, much better material with which to work. The Early Frame, Nimble Tailor, and Charlton were the best early Peas fifty-six years ago. Gardeners of old were careful cultivators of kitchen garden crops, even without the stimulating effects of public competition. The system of culture pursued by them in the case of Peas was to sow the first crop on an early border, fully exposed to the sun, about the end of October. McIntosh says: "In cold, wet ground draw the soil up into ridges a foot high, and sow on the top of them." Another system was to sow thickly in a bed, where the plants could be protected with a glass frame during severe weather. Pieces of turf were placed under them to facilitate their removal into rows in spring. An improvement on that system is, I think, to sow in shallow boxes, the plants being more easily removed from these into drills when the time comes to plant them out. In this way a week may be gained. About the end of February or early in March is a good time to plant them out if the weather is favourable. Since I came to the south I have given up sowing Peas in autumn or in the early winter months. If the ground is in good condition we make the first sowing in January; if not, on the first favourable opportunity afterwards. I have found sowings made on the 1st of February better than earlier ones. The young plants seem to grow on without check, and produce a much more prolific and vigorous growth. In wet districts the soil ought to be deep, but not very rich, as under such conditions they run too much to straw. I have found that they seldom grow too strongly in our dry district sown on rich deeply-trenched soils; and in poor soils they do not grow sufficiently to produce a crop. Take the present season as an example. Our crop of early Peas has had no rain since they were 3 inches or 4 inches high, with the exception of one week in which we had occasional showers. The ground on which they were sown was trenched 18 inches deep, and two layers of manure—one at the bottom of the trench, and the other from 6 inches to 9 inches under ground—were applied. In such a dry season without this manure they would not have grown sufficiently to have produced a good crop. We sow in open quarters about the middle of February in order to obtain a succession.

VARIETIES.—This season I made a trial of early Peas in a favourable position and on good ground. The haulm, considering the dry season, made vigorous growth. They were sown in single rows 3 feet 6 inches apart on the 18th of February. The variety first ready to gather was Veitch's Extra Early, the haulm of which was 3 feet 10 inches high; the leaves considerably blotted, and 10 pods on a stem. I also picked three of the best pods, and counted seven, eight, and nine Peas in them. The distance between the longest joints was 5 inches. They were ready to gather on June 16. The Shah had haulm 4 feet 8 inches high, the leaves blotted, and 11 pods on a stem; the three best pods had seven, seven and eight Peas in them; the distance between the longest joints was 5½ inches. This is a white wrinkled Marrow Pea sent out some years ago by Mr. Laxton, and is the earliest Marrow Pea I have yet seen. When cooked it is excellent in flavour. It was ready to gather on June 21. Early Bird, sent on trial by Mr. W. Sutton, of Kenilworth, is an excellent early blue Pea of the Kentish Invicta

type. The stem grew 5 feet 4 inches high, leaves very slightly blotted, and there were fifteen pods on a stem; the three best pods had eight, nine, and ten Peas in them. Distance between the joints 5½ inches; leaves and pods dark green in colour. It is an excellent type of early Pea, and is ready to gather on June 21. William I., also sent out some years ago by Mr. Laxton, grew 5 feet 7 inches high, and had sixteen pods on a stem, with six, seven, and nine Peas in a pod. It was ready to gather June 24. Distance between the joints 6½ inches; Peas and pods dark green, but not at all of good flavour when cooked. This is certainly its one fault.

FIELD PEAS.—Kentish Invicta is the most popular early kind for field culture in our district. It bears a good crop, does not produce too much haulm, and is of good flavour. In our trial ground it grew 5 feet 4 inches high, had fifteen pods on a plant, and one branch on the stem, which none of the above had. The three best pods contained six, seven, and seven Peas in them, and the longest space between the joints was 5 inches. It was ready to gather June 24. Day's Early Sunrise has also been brought forward very prominently for field culture during the last few years. It was our dwarfest Pea, not being more than 3 feet 6 inches high and having a stout vigorous stem and 3½ inches between the joints. There were twenty-one pods on one stem, and five, six, and seven Peas in a pod; ready for use June 26. Early Kenilworth, sent with Early Bird, had two branches on the stem; its height was 5 feet 8 inches. It bore ten pods on a stem, and had eight, nine, and nine Peas in the best three pods. Its fault is too much length of stem between the ground and the first pods. It is the latest of the early Peas we have tried, and owing to its branching habit it should be sown thinner than the others. Earliest of All, raised by Mr. Laxton and sent out by Messrs. Hooper, was sown with the others, but it was our own saved seed, and it has sported in an unaccountable manner, probably owing to the row of it being next to a tall growing late sort, as it is more like William I. than the original Earliest of All. J. DOUGLAS.

Great Gearies Gardens, Ilford.

PLANTING ASPARAGUS.

OWING to the lengthened drought which we have had, those in the habit of transplanting Asparagus when it is in active growth are doubtless in the same position as myself—all behindhand, for few would care to move such a succulent plant as Asparagus in such hot, dry weather as we have lately experienced. I do not, however, despair of yet being able to get the usual plantations made, although I would rather plant in June than in July; nevertheless, under the circumstances I do not consider the middle of July too late, provided suitable weather comes either before or by that time. By summer planting I get a more regular plant, there being fewer losses than in early spring. In practice a vigorous healthy plant will come up as strongly the next year as plants one year older, and will remain longer in health, there being no mutilated roots to die away and invite disease or afford a lodgment for insects. Summer planting is also useful in another way—it gives more time to prepare the soil and for the maturation of other crops before the ground is wanted; in fact, I believe that Asparagus may be planted from June to August with greater safety than at any other time of the year. How quickly the plants establish themselves after removal is surprising. There must not, of course, be any delay when the work of planting is begun. The ground should be thoroughly prepared some weeks previously and made fine on the surface, in order that there may be plenty of friable soil to fill in round the roots.

THE PREPARATION OF THE PLANTS is a simple matter; the seed should be sown thinly in drills on a rich piece of ground where a fine tilth has been prepared, for it is necessary that the roots should lift with as little mutilation as possible, and this they cannot do if the staple consists of

large, hard lumps. Nothing is gained by sowing the seed before the beginning of April; if sown earlier there is risk of its rotting in the ground. I like to wait until the tops have grown 5 inches or 6 inches before transplanting, for the plants must have time to make sufficient roots to enable them to bear removal. All being ready, on a suitable moist, quiet day the plants may be lifted with a trowel and transplanted without doing the roots any serious injury. If only one or two hundred plants are put out it would not be a serious business to shade them with evergreen branches. In every case if the weather should become suddenly hot and dry, water must be given them until they get established. Unless the soil is very wet at the time of planting we make it a rule to water directly afterwards, and then we place a thick coat of half-rotten manure between the rows. This mulching keeps the soil about the roots sufficiently moist for several days without additional waterings. The only further trouble the beds give that season is keeping them free from weeds. One caution here is needful, that is not to plant too deeply. I prefer to draw out a drill 2 inches deep and carefully spread out the roots, allowing the crowns of the plants to be an inch under the surface.

THE WINTER TREATMENT of such plants is very simple. Early in November the stems should be cut down close to the ground, and then a layer 2 inches thick of rotten farmyard manure should be put on the bed, and on the manure about an inch in thickness of fresh soil. The same treatment should be given the next year, which will have increased the thickness of the soil on the crowns to the depth required. In succeeding years the beds will come to be managed in the ordinary way. Those who have to deal with a light soil may not find it necessary to adopt the piecemeal plan of increasing by degrees the depth of soil on the surface, but in heavy soil it becomes a necessity to do so, because when the plants are young they have not the strength of older ones to push through 4 inches or 5 inches of heavy soil.

J. C. C.

Old roots of Scarlet Runner Beans will, if stored like Dahlias, planted out early and staked at once, placing some evergreen twigs to screen the young growths from cold winds, yield a supply of pods considerably sooner than seedlings. But for general crops I like the latter best, as their growth is more vigorous and lasting; however, as the Runner Bean is such a useful vegetable, both roots and seeds may be used, each having their special advantages.—J. G., *Hants*.

Sowing Cabbage seed.—In this locality it is a very general practice to sow Cabbage seed in June, so as to have plenty of thrifty young plants ready for filling up Potato ground in July and August, and by this means an abundant supply of young Cabbages is secured for winter. The early small-hearted kinds, like Early York and the Rosette Colewort, are great favourites in private as well as in market gardens, as they can be set thickly on the ground and produce a quantity of useful vegetable food from a small area; as frost is seldom severe enough in this district to injure Cabbages, they to a great extent take the place of the hardier kinds of Kales so much grown in the colder parts of the kingdom.—J. G., *Hants*.

Summer Lettuces.—There can be no question that Lettuces to be crisp and succulent require to be grown without check from the first sprouting of the seed until pulled up for use, and the best way to ensure such a condition is to sow the seed where it is to remain and avoid transplanting, for while the plants are getting over the check occasioned therefrom they will, if left undisturbed, be nearly fit for use. The best plan is to sow rather thinly in drills 1 foot apart, and as soon as the plants are large enough to handle to thin them out partially, and by pulling out the largest for mixed salads as they become fit for use a succession of crisp Lettuces may be kept up with very little trouble. The main thing is to

have a deeply cultivated, well-enriched piece of ground dug up some considerable time before it is wanted for sowing, in order that the surface may get mellow and friable, for on loose, freshly-dug soil it is useless to expect Lettuces to grow freely in dry weather. A sowing of the Brighton White Cos and All the Year Round Cabbage Lettuces made about once a fortnight will yield a constant supply, and if the same course is adopted with Radishes and Mustard and Cress, there need be no fear of the salad supply running short, even during the driest periods of the year. Transplanting should be looked on as an evil to be avoided as far as possible in the case of such things as salad-ing, in which the quicker the growth the better the produce.—JAMES GROOM, *Gosport*.

INDOOR GARDEN.

CARNATIONS TO FLOWER IN WINTER.

A CORRESPONDENT asks if Carnations other than the perpetual flowering kinds can be made to flower in winter if the flower-stems are removed early in the year. It would not be quite safe to say that they would not flower, but the instances in which satisfactory results would be obtained would be but few, whether the plants were placed in a warm house or not. It is usual with experienced growers of Carnations to pinch off the flower-stems as soon as they can be perceived some time in April. Their object in doing this is to obtain stronger layers than would be produced if the plants were allowed to flower. These layers seldom attempt to flower, and when they do the flowers usually open in September and October. In a large collection there are always some plants that will produce late blooms, but when much out of the usual season they are not of good quality. Nearly all the self-coloured Carnations will submit to forcing, the Clove-scented varieties included, but I would not care to force them to produce blooms earlier than April. It would be useless to do so when perpetual flowering kinds can be produced with so much less trouble all through the winter and early spring months. Seedlings from a good strain yield very satisfactory results in the way of late bloom. Sow a pinch of good seeds in April and grow the plants well either in the open ground or in boxes out of doors. Plant three good strong plants in a 10-inch pot in February. Grow them on out of doors in summer, moving them under glass when the flowers open, and if these are cut when fully expanded others will be produced far into the autumn, and even winter, if the plants are placed where the flowers are near the glass, and in a minimum temperature of not less than 55°. Some named varieties (they are few in number) have a tendency to produce flowers late in autumn and in winter. A very fine scarlet bizarre named James McIntosh will always flower a second time late in the autumn, and if layers do not start into flower before they are potted they will do so afterwards. Indeed, this variety will generally produce a second bloom from October to Christmas. It may be stated that all the strong layers which are taken from the parent plant and potted in September would start at once into flower if they were kept in a warm house during winter, but the flowers would not open until April.

J. DOUGLAS.

Seedling Pelargoniums.—The difficulty experienced by Mr. Murphy (p. 490, Vol. XXV.) in inducing seedling Pelargoniums to bloom during the first season is one which may be overcome, more particularly as regards zonals. It is, of course, an advantage to be able to ascertain the merits of seedling plants during the first year of their existence, as it frequently saves the trouble of wintering varieties which may prove to be of no value, while in the case of meritorious kinds an early knowledge that they are so is of importance, in order that their propagation may be proceeded with. Mr. Murphy's failure in inducing his seedlings to bloom during the first season may

be ascribed to two causes, viz., the late sowing of the seed, *i.e.*, during January or February, and secondly, the planting of the seedlings in highly manured soil. In order to flower such plant during the first summer, or at all events during the early autumn months, the seed should be sown as soon as it is ripe, or, say, not later than the last week in September. It should be sown in pots or shallow seed-pans filled with light soil, and should be placed in a pit or other structure slightly shaded during bright sunshine, or the surface of the pot or pan may with advantage be covered with a pane of glass until the seeds have vegetated, when it should be removed. The seeds may be sown moderately thick, pressed slightly into the soil with a flat piece of wood or the bottom of a small flower-pot, and slightly covered with fine soil. As soon as the first rough leaves have been developed, the seedlings should be pricked off into other pans containing similar soil to that in which the seed was sown, and should not be placed too closely together, as in these pans they may be wintered. They should then be placed near the glass in an ordinary greenhouse temperature. Towards the end of February they may be potted singly in 3-inch pots filled with light rich soil; keep the pit or other structure which contains them somewhat close and warm until they have become established in their pots. Soon after the end of March, in ordinary seasons, the protection of a cold pit will be all they will require until the last week in May, when zonal and Ivy-leaved varieties may be planted out in a bed of light friable soil in an open situation fully exposed to the sun. They should be supplied with water during very dry weather and treated in all respects the same as ordinary bedding plants; by the middle or end of August most of them will be in bloom, when cuttings of desirable varieties may be at once inserted in order to secure stock as soon as possible. Seedlings of the show and fancy sections of the Pelargonium may for a time be treated as has been recommended, but being less hardy than the zonals, they should be flowered in pots under glass instead of being planted out, and should consequently be shifted into their blooming pots, which may be some 5 inches in diameter, early in May. They should be placed in a light and airy situation, such as in the front of a greenhouse or other suitable structure, where most of them will produce flowers more or less, as well as show their distinctive characteristics as to habit of growth, &c., during the late summer or early autumn months of their first season.—P. GRIEVE.

Vriestia hieroglyphica.—This was lately exhibited before the French National Horticultural Society. It is described as being a fine addition to this tribe of plants, the leaves being transversely striped with irregularly formed bands, which are of a deep green above and brown underneath. It has been put into commerce by the International Horticultural Company.—J. C. B.

5216.—**Eucharis insects.**—I am sorry that "J. S." found my suggestion as to drowning the mites of no use. I tried it myself afterwards in a small way, but with little result. Have you tried cleaning the bulbs with a stiffish brush and some insecticide, such as soft soap and tobacco-water or sulphur? Water at a temperature of 130° to 140° Fahr. will kill most insects, and does not, I believe, injure the foliage of plants. If it would not hurt the bulbs, I should immerse them for a minute or two in water of that temperature. It might be tried at first experimentally.—G. S. S.

Mandevilla suaveolens.—The large white Convulvulus-like flowers of this make it an attractive greenhouse climber during the summer months, that is to say when in a thriving condition; but it is frequently met with so much infested by red spider and other insect pests, that the greater part of its beauty is spoilt. Climbing plants are, as a rule, a most neglected class, for when trained to roofs, subjects underneath them often prevent their being syringed when neces-

sary, and in the hot and dry atmosphere so close to the glass they soon become an excellent breeding ground for insects.—ALPHA.

Begonia Margarita.—This is the name of a seedling Begonia raised by M. Brunt, of Poitiers, near Vienne, France, and which seems likely to prove of great decorative value. It is the result of crossing *B. metallica* with *B. echinosepala*, the latter being the seed-bearer. It is said to be of extraordinary vigour, forming in a short space of time enormous tufts covered with flowers all the winter. Plants put in the open ground in July and potted up in autumn make fine bushy specimens, about 3 feet high and 2½ feet through. This hybrid Begonia branches out from the base of the stems, which are upright, rigid, and strong. The bronzy green and purple foliage clearly indicates that one of its parents is *metallica*, whilst the inflorescence most resembles that of *echinosepala*.—J. C. B.

Double Pelargoniums.—I find these to be most useful at this season in a cut state; they do not shake to pieces like the single varieties, and their colours are equally bright and cheerful. A cool airy house suits them best, for although they are not as a rule very satisfactory in the open air, they only require the shelter of a glass roof to bring them to the highest state of perfection. Old plants in medium-sized pots yield enormous quantities of bloom if potted in good sound loam, and a sprinkle of Standen's manure keeps them from getting exhausted. As long as they keep on growing they are sure to keep on flowering. What are termed semi-doubles are perhaps the best; they are not so stiff and formal as when fully double, and consequently they open more perfectly; in damp weather the very double sorts are liable to decay in the centre before the outer blooms expand. Now is a good time to increase the stock for next season's flowering; they strike freely in 2½-inch pots, and if shifted into 4-inch ones in September, they will make sturdy plants by the end of the year. It is a mistake to over-pot Pelargoniums; they flower best when the pots are filled with roots. A slight shade from full sunshine, plenty of fresh air, and careful watering are the main points needed to ensure a full supply of these useful flowers.—J. GROOM, *Gosport*.

ROSE GARDEN.

A RUSH OF ROSES.

AT last Roses have come into bloom with a rush. Hardly has the wind veered round out of the east-north-east till they have opened by wholesale. If not, the more haste the less speed—the more haste the less size assuredly. The average size is smaller than the normal measurement in this respect. But as the shows are now upon us, these may correct our individual notions considerably. With a continuance of hot weather, the Rose harvest promises to be short as well as tolerably abundant. The form of the Roses which threatened to be specially faulty at first has also much improved. The want of size is now the chief failing, and this may be accounted for in two ways; the frosty nights and extremely hot and dry days both tended to starve the blossom buds and to prevent that gradual bud filling which results in a maximum size. On the heels of this long spell of ungenial Rose weather have come a few days of forcing warmth, which has opened the buds prematurely as regards the due preparation of the plants. The season is really far advanced, but the Roses are exceptionally backward, at least have been so up to the last moment. A more than usual percentage of buds also seems to burst in the opening. This seems to arise from the cold frosty nights setting the buds fast, to use an expressive East Anglicism. The outer petals hold together as if they were gummed; this tightness of the covering petals often causes the buds to burst all at once, and such Roses are useless for showing. It is a useful and safe plan slightly to blow or otherwise relieve such adhering petals. The buds may

open a little sooner in consequence, but then they will open regularly into well-formed blooms.

D. T. FISH.

Rose Celine Forestier.—I quite agree with the estimate formed of this Rose in a recent number of *THE GARDEN*. It is hardy, vigorous, and free flowering. It appears to do well on most soils, but is, I think, most at home on a sunny wall, as it should be pruned much in the way of Gloire de Dijon. I used to grow this Rose in pots for forcing and liked it much for that purpose. Well grown it has a very pleasing appearance as a standard, the foliage being abundant and of a pleasing shade of green. Those who have large conservatories to embellish should make a point of growing a few standard pot Roses. They have a fine appearance amongst other things, and they do not need half the trouble generally given them. Liberal waterings and good feeding through the summer, with occasional top-dressings with some concentrated stimulant from the time they start into growth, will keep them healthy and vigorous for several years without the trouble of annually repotting.—J. C. B.

Roses at the horticultural show held in connection with the exhibition of the Essex Agricultural Society on the 12th and 13th ult. afforded abundant illustration of the extreme lateness of the season. There was only one collection of thirty-six Roses, and of these the flowers cut from the open might have been counted on the fingers of one hand. The classes of twelve and of seven were patches of coloured leaves, without shape or character, rather than Roses. Even *Maréchal Niel* and *Gloire de Dijon* were conspicuous by their absence. Messrs. Paul & Son, of Cheshunt, had a walk over for the thirty-six, and, as already remarked, most of these were obviously from under glass, and the latter, excepting in a very few cases, seldom equal out-of-door blooms. The following were the varieties staged by these excellent growers: Dupuy Jamain, Mrs. Bosanquet (a Rose seldom seen on a prize stand), Eugène Furst (very round, almost ball-shaped, of a deep velvety crimson colour), Jean Ducher, Madame Nachury, Violette Bouyer, Avocat Duvier, Innocente Pirola, Auguste Rigotard, La France, Souvenir de Thérèse Levet, Madame Lacharme, Dr. Andry, Madame Levet, Abel Grand, Edouard Morren, Jules Finger, Perfection de Monplaisir, Madame Angèle Jacquier, Bernardo Jacobea, Juno, George Baker, Caroline Kuster, Glory of Cheshunt, Catherine Mermet, Climbing Edouard Morren, Madame Montet, Madame Luizet, Souvenir d'un Ami, Fisher Holmes, Comtesse de Serenye, Alfred Colomb, Marie Van Houtte, Sénateur Vaisse, and *Gloire de Dijon*.—D. T. FISH.

NOTES ON GARDENING TOPICS.

I HAVE slightly altered the title of these "notes," because I observe my original title has been virtually appropriated elsewhere by another writer, who, although his professed occupation is "thinking," could not, I suppose, "think" of a title of his own.

English Melons.—A friend of mine who has had opportunities of judging says that Melons raised from imported seeds from the typical races of the East surpass our home-raised varieties in flavour and general excellence the first year, but afterwards deteriorate. This interested me, because I have grown Melons frequently from seeds sent to me by famous travellers from the home of the Melon in Persia and Merv and other places, and when tested fairly beside English varieties, they have always proved inferior in flavour. I noticed that they are always very distinct in foliage and also in general character. We have a Melon from seeds gathered from varieties of noted excellence on the banks of the Oxus growing now among our own kinds, and nearly as different looking from the latter as a Cucumber plant, but the quality of the fruit has yet to be determined. Many years ago Knight held that the Persian varieties deteriorated in this country, but he changed his opinion, and "succeeded com-

pletely in rendering the original quality hereditary" as long as he subjected the plants to high and proper culture. I suppose many of our English Melons have a very long home pedigree if it could be traced, and the really good sorts are excellent. What the flavour of a Melon ought to be I do not know, but hitherto judges have always awarded the palm to those fruits which were sweet and juicy; if large, all the better. The peculiar flavour of the Melon, apart from these qualities, is not acceptable to some people at all. Green-fleshed Melons are as a rule the most luscious and best flavoured, and are most grown for that reason, but the quality of a Melon is very much improved by being eaten cool and on a warm day, and I attribute much of the excellence attributed to the Melons of the East by travellers to the conditions under which they are enjoyed. West Indians say that well ripened English Pine-apples are better than those grown in the plant's native country. Why, therefore, should English-grown Melons be worse than those grown abroad?

Melons in Evelyn's time.—Evelyn in his "French Gardener," printed over 200 years ago, is great on Melons, describing them as "the most precious fruits that our kitchen gardens afford." Evelyn has always been credited as being a particularly trustworthy authority on all subjects on which he wrote. His garden at Sayes Court was the most scientifically managed of the time, and contained many choice plants, which attracted much admiration on account of the fine order in which they were kept. When, therefore, he tells us that he grew Melons on hotbeds in the open air with the assistance of mats and "glass bells" (probably cloches), and that they "afforded him a store of excellent and high-tasted fruit every year," one wonders if our climate was better then than now, or if it was that Melons were earlier and harder in those days. The last is probably the true explanation, because he dwells on the disadvantages of the climate and "the storms of hail such as crack all the bells, and to prevent which some were provided with covers made of straw to clap over the glasses at night to prevent this accident." Evelyn was, however, only acquainted with the red-fleshed Melons, which are now reckoned the hardiest, for among other qualities good Melons were to be of a "vermilion hue within," and to "have the flavour of that pitchy mixture wherewith seamen dress their cordage." He procured his seeds from "Lyons, Tours, Anjou, Champagne, and other places where men emulate one another who shall have the best Melons"—another reason for supposing that Evelyn's Melons were a harder race than any we have now. The Vine growers about Thomery, in France, still grow Melons exactly in the way Evelyn describes, and I have seen good crops nearly ripe there in August. Are those hardy French Melons at all known in this country, and what are their qualities? It is worth while enquiring.

Failures in Grape culture.—There are degrees of failure, but anyone may be said to have failed whose crops go back from their original excellence. That success with growers fluctuates in an unaccountable degree is a well-established fact which has greatly exercised the minds of cultivators for many years. The Vine under glass in this country is, we all know, a remarkably long-lived plant, as constant and fertile as it is long-lived, and it is needless to name examples, for they will occur to everyone. What is it, then, that causes so many failures in Vines in the full flush of youth and vigour? and what is the reason of so many renewals, replantings, and border-makings, and alterings, all fraught with so much cost to an employer, that, as some have been known to remark, it would have been cheaper for them if they had "contracted with a Solomon or a Webber from the beginning to provide a supply of Grapes?" To avoid the appearance of invidiousness, an example that happened many years ago will suffice to illustrate the case of many other cultivators. A grower astonished visitors at a noted show by the excellence of his Grapes from the first crop on young Vines. The next year and the

next there was a visible deterioration in quality, and on the fourth year, I think, I remember looking at the Grapes with some others, wondering what had come over them to cause them to be so absolutely poor and necessitate complete renovatory measures extending over the whole of the vineries, the Vines having barely more than reached the top of the rafters. The good quality of the earlier crops caused other gardeners to copy the same practice which had produced them, and not a few of these have since had to record a similar experience. An enlightened student of such matters, from an unbiased and abstract point of view, told the writer the other day that the true secret of successful Grape culture and Vine border-making was yet to be discovered, and thought more correct information was probably to be derived from examples in which Vines happened to have found a naturally suitable soil than from those in which the borders had been artificially prepared, and he instanced the remarkable and constant crops of Muscats from the Vines of Messrs. Lane at Berkhamstead and some other examples of good crops of fine fruit from Vines many years old growing in common soil, only tilled as for other crops. After all, Lindley was right when he selected such examples as the Hampton Court Vine in order to estimate aright the conditions of successful Vine culture, and it would almost look as if, after having exhausted all our theories and practice on the subject we are coming round to the "first principles" laid down by one who was not a practical grower at all.

Standard Peaches.—"J. C. C." is clearly in error in thinking that we must "mutilate the branches of these to an extent that is both unsightly and injurious to the trees" in order to have properly ripened fruit. The large ten or twelve-year-old trees at White Hill, 500 miles further north than where "J. C. C." practises, are living refutations of his argument. Let alone, the standard Peach, like the Apple, turns an umbrella-shaped head out to the light with all, or the best portion of, the leaves and spurs on the outside, and with judicious disbudding and very little tying down of the points of the long branches this can be insured. If I had my will, I would never again plant a wall or trellis-trained Peach under glass for crops to be ripe after this season of the year. A roomy-topped glass house placed against a high back wall and the trees planted against the wall, allowing their heads to grow out standard shape, would perhaps be the best arrangement for securing a sunny exposure for the trees if the wall faced south, as it should do, but a lofty span would also answer. If some one would try the experiment on a good scale where it could be seen, I have no doubt that the plan would be generally adopted.

Loss of Strawberry crops.—The plan suggested in *THE GARDEN* (p. 514) of supporting Strawberries out-of-doors with Hazel sprays is a good one, I have no doubt, and applicable in small gardens, but the great objections to all such contrivances is the cost of application in large gardens. This is why the Strawberry crinoline wire invented a few years ago never became popular. If some handy means could, however, be found to keep the fruit off the ground, it would be an immense boon to Strawberry growers. Wide planting to some extent prevents loss from wet, but that is a sacrifice itself, and even then great quantities of fruit rot in wet weather owing to the foliage growing over the fruit. Sometimes more than half the crop is lost through wet at the critical gathering period, and the mischief done by slugs and blackbeetles on some soils is also great. Propping the Strawberries up off the ground prevents injury from all these causes, but the plan is impracticable on a large scale in quarters covered by nets and where gathering is freequent, and I have never seen it attempted except on a small scale to save a few good berries perhaps. Of late years the common blackbeetle has done a good deal of damage in gardens. Here it is far worse than the slug, boring into and hollowing out nearly every good berry that lies close to the

ground and always taking the fine ones as well as the ripest. A mulching of straw or manure greatly facilitates its increase, affording just the right kind of shelter, but without mulching the fruit gets so dirty by spattering during rain as to become unfit for any purpose. Naturalists, I believe, maintain that this beetle does not attack fruit, but they are in error. Market gardeners gather their fruit as fast as it gets ripe, and so save much of it, but in private gardens where there is no need to do that, the fruit not being consumed so quickly, the rain and such pests have full play.

State of vegetation.—Not for years have we seen outdoor vegetation looking so well at this season. The foliage of the deciduous trees is magnificent and of good substance, thanks to the sunny weather we have had. The only exceptions are the Horse and Spanish Chestnuts, which have smaller and not quite as good foliage as usual, owing, I think, to the frosts in April. Hereabout the rusty appearance of the Horse Chestnut is very marked, and the flowers have also been poor and imperfect. All other trees look well and the growth of the Grass in some places has been extraordinary notwithstanding the drought. I could gather armfuls of the Meadow Foxtail nearly 5 feet long in our young plantations between the trees, and other Grasses are proportionately longer than usual. As to fruit crops, we shall have Apples, a few Cherries, plenty of Strawberries, and a much reduced crop of Gooseberries, Currants, and Raspberries, thanks to the frosts which destroyed the fine promise, and these will be about all. Mostly all kinds of vegetable seeds have done well so far, but less than 3 inches of rain during the last two months is too little, and drought is beginning to tell. J. S. W.

PLANTS IN FLOWER.

Gladiolus ardens.—I send you a spike of this Gladiolus, and I think you will agree with me in saying that it is superior in point of colour to any of its class. It is perfectly hardy, but propagates very scantily.—F. J. HUBERT, *Fountain Street, Guernsey.*

* * A very fine Gladiolus, orange-scarlet in colour, of the brightest description. When seen *en masse* it must be very attractive.—ED.

Magnolia macrophylla.—Our large plant of this has two dozen flowers on it this year just now fully expanded and in prominent bud. The fully-developed flowers are rather over a foot across, the petals falling well back as the bud expands. Taking into account the large flowers and huge leaves of this Magnolia, it looks just now more in keeping with the inmates of the Palm house at Kew than as a companion to the Chestnuts, Beches, and Limes by which it is surrounded.—E. B.

Rockets.—Mr. John Gray, Eglinton Castle, Irvine, sends us a photograph of his border of Scotch Rockets. It is 283 feet in length, 6 feet in width, and contains over 1100 plants, each averaging five spikes of bloom. The latter is still in good condition, but the long dry, hot weather has been rather against it. The perfume of this bed of Rockets—probably the largest in the country—is, after a slight shower, said to be delightful.

Rare hardy flowers.—The following plants are now among the most noteworthy in flower in the Hale Farm Nursery, Tottenham—viz., *Lilium Hansonii*, *L. polyphyllum* (a beautiful variety), *L. concolor coridion*, *L. parvum*, *L. pardalinum pumilum*, *Iris jancea*, *Sparaxis pendula*, *S. pulcherrima*, *Iris ochroleuca gigantea*, *I. Monnierii* (very fine), and *Stropholirion volubile*. We never remember to have seen this nursery so richly stocked with flowers as it is at present.

Tuberous Begonias.—Some enormous double flowers have been sent to us by Mr. Mounsdon, of Sefton Park, who says he possesses a large collection of both single and double varieties; some of the blooms sent measure 4 inches across the dense rosettes of petals. Some are deep scarlet, others salmon-pink, while one is a delicate blush. These fine double Begonias are very

showy, but they are too "lumpy" for many people. The great strides that have been made in their improvement is most remarkable.

Erigonum umbellatum.—I send you a flower of this plant, which is not much known. It is said to be hardy, but of this I have had no proof, as I possess but one specimen, grown in a cold house. The blossoms are sub-everlasting, remaining bright for some time in a dried state, though in this respect not so durable as the *Helichrysus*.—J. M., *Charmouth, Dorset.*

* * A pretty Californian perennial plant allied to *Polygonum*, and perfectly hardy. The colour of the flower clusters, a clear chrome-yellow, renders the plant attractive.—ED.

Spiraea splendens.—Of this pretty shrubby variety, Mr. Stevens brings us from his garden at Byfleet some beautiful flowering sprays, which show how attractive this shrub must be at the present time. It bears some resemblance to *S. callosa*, but the flower clusters are not so broad, but denser and of higher colour, which is bright carmine-red. It is, we believe, a garden hybrid between *S. callosa* and one of the *salicifolia* section of the genus. It is one of the best of its race and can be recommended for general cultivation.

Veronica Traversi.—As an evergreen shrub this Veronica is quite distinct from the other varieties commonly met with, being denser in growth and more regular in outline. It, however, often fails to flower as freely as the larger growing sorts, but such cannot be said of a specimen in the herbaceous ground at Kew, every shoot of which is now thickly furnished with spikes of blossom, white in colour with the exception of a tinge of mauve. This Veronica is among the hardest, yet it will not survive any very severe winters, but generally if cut to the ground it quickly recovers and grows again freely. As seen at Kew it is certainly a very attractive flowering plant.

Linaria triornithopora.—Some specimens of this uncommon Linaria have been sent to us by Mr. Rawson, of Fallbarrow, Bowness, Windermere, which show what a beautiful plant it is when well grown, the flowers being a deep lilac, pencilled with yellow, white, and a variety of other colours; they are set in whorls at short intervals on stiff erect stems, and have a singular appearance. Mr. Rawson remarks that "the shades of colour vary much, and that the plant is much taller than stated in the note in last week's GARDEN (p. 526). I have it," he adds, "in a cool house nearly 4 feet high, and out-of-doors it grows quite 2 feet. It stood out all last winter in the seed bed." It is certainly a plant that deserves to be more generally known than it is, both for greenhouse culture and the open border, but it is, we believe, only of biennial duration.

Brodiaea coccinea.—When well grown, this singular Californian bulbous plant is really very showy in the open border at this season. Some uncommonly fine spikes of it come from the New Plant and Bulb Company's nursery at Colchester, where its culture is evidently well understood, as we have rarely seen better examples. The deep crimson-green-tipped blossoms drooping in graceful clusters from the top of tall slender stems have a very pretty effect. Another *Brodiaea* has also been sent from the same nursery, viz., *B. congesta* and its white variety, the latter a new and rare variety, not quite white, but very pretty. Among other plants sent by Dr. Wallace are *Crinum aquaticum*, *Lilium Kramerii* and *L. testaceum*, *Cyclobothra alba* and *Brodiaea stellaris*, a little species like a miniature form of *B. laxa*, and purple in colour.

White Rockets.—I send you two sorts of Rockets—one is the true Scotch, received from Eglinton Castle last year, the other the common French kind. As you will observe, they are totally different; the Scotch only grows about a foot high here, is very close in the spike, pure white, and smaller and more compact than the French. One kind is often substituted for the other; both are good, but the Scotch is in Rockets what the true

old Siberian Larkspur is amongst Larkspurs—quite a gem. Everyone should cultivate these lovely border plants; they make a grand show when planted so as to form patches from 2 feet to 3 feet through, and, associated with tall Larkspurs, Irises, Columbines, Lychnises, especially *L. viscosa splendens*, *Campanulas*, *Cheiranthus Marshalli* and *alpinus*, *Saponaria ocymoides*, *Gladioli*, and hosts of other things, they are most effective.—J. CROOK, *Furnborough Grange.*

Delphiniums are now among the glories of the open-air garden, their tall massive flower-spikes consisting of blues of various shades towering above all other plants. A very fine selection of seedlings as well as named sorts has been sent to us by Mr. T. S. Ware, from his nursery at Tottenham, showing what grand varieties there are now among these valuable flowers. All the spikes sent are uncommonly fine, some being as much as 4 feet and 5 feet high and furnished densely half their height with blossoms. We have singled out the best from the numerous sorts sent. These are named Blue Giant, deep blue with tall massive spikes; Lifeguardsman, clear blue; George Taylor, pale blue; Leonce Bart, pale blue, black centre; Hendersoni, a loose spike, rich azure-blue; Mdme. Le Bihan, double bluish lilac, white centre; C. Glyn, bright blue with light centre; Lord Mayor, very fine bright violet-blue. These are the finest in the series, but none were poor. No garden can be considered furnished now-a-days if these superb plants are wanting. Rightly placed in bold groups, no plants can possibly produce a finer effect for several weeks during summer.

Nierembergia rivularis.—It is surprising to see how luxuriantly this little hardy plant grows at Munstead under treatment quite opposite to that usually adopted. Instead of being in a moist position it is planted on a dry knoll in light soil. Here it is spreading in all directions and is now beautifully in flower. It seems as if this little plant needs to be divided often so as to prevent it growing into dense matting tufts which seldom yield flowers. Miss Jekyll's success with it is worthy of note, and those who have cushion-like tufts of it that never yield flowers would do well to try it on the Munstead plan. Near the spot the "White Cup" is growing on there is a broad mass in full flower of the Bird's-eye Primrose (*Primula farinosa*), with stems as much as a foot high terminated by broad clusters of flowers. This, again, is a plant that is said to need a moist soil, as in a natural state it generally affects boggy places. Near this pretty Primrose group is a mass of *Campanula pulla* a yard or more square, and studded with hundreds of beautiful drooping bells of a rich deep purple. These three plants are just now among the most interesting among the multitudes of beautiful plants now in flower at Munstead.

A new Bomarea (B. Williamsæ).—The first flowers we have seen of this beautiful new species are those which have been sent to us by Mr. Richardson, curator of the Liverpool Botanic Garden, to whom belongs the credit of having flowered this plant for the first time in Europe. This new species is one of the finest of a genus rich in beautiful garden plants of the older species. It most resembles *B. Carderi*, but is finer as regards colour. The flowers are about 2 inches in length; the three outer sepals are of a soft rose-pink, white on their inner surfaces, and copiously spotted with blackish purple. The three inner sepals are half white and half pea-green, the lower part being bordered by heavy blotches of black. The flowers are borne in the same way as in *B. Carderi*, that is, in a wide-spreading branching umbel. The cluster sent by Mr. Richardson consists of twelve flowers borne on the end of a long slender shoot, furnished with broad luxuriant foliage. We welcome this new plant as a real acquisition to beautiful greenhouse pillar or roof plants, one that everyone may grow, as its culture is by no means difficult. It was one of the series of new *Bomareas* discovered and introduced to this country by Messrs. Shuttleworth, Carder, & Co., of Park Road, Clapham, who are now distributing them.

Iceland Poppies.—These have for some time past been one of the glories of the garden at Munstead. Those who have only seen weakly tufts of this charming Poppy would like to see it as represented there, not in solitary tufts, but in beds several yards square entirely filled with vigorous plants flowering in the greatest profusion. They are of various colours, in fact every intermediate shade from clear yellow to almost pure scarlet. The orange-red shades are extremely brilliant, and a number of flowering plants together light up the whole surroundings. There is also a pure white, but Miss Jekyll is inclined to regard this as being different from the yellow and orange-red forms. It is certainly less robust, but very chaste and lovely. These "Munstead Poppies" are remarkable for large size, being fully twice the ordinary size, a circumstance doubtless due to liberal cultivation. Miss Jekyll saves her own seed, and thus raises abundance of seedlings which are grown on into large tufts, by which means she is enabled to produce very large quantities of blossoms. A bed of Iceland Poppies seen on a sunny morning in June, with their cup-like flowers glistening like satin in the sun, is one of the most charming sights a garden can afford.

New crimson Victoria regia.—There is now flowering in Mr. Dickson's garden at Cherkley Court, near Leatherhead, a remarkable new Water Lily from the Amazon, almost identical with *Victoria regia*, except the colour of the flowers, which instead of being a pale rose is a deep purple-crimson, much deeper than the rose-coloured variety of *Nymphaea alba*. The seeds of this plant were received by Mr. Dickson last year direct from the Amazon. It is therefore probable that this is the only place in which this plant has flowered in Europe. It is growing in a circular tank in the conservatory, but it is not large enough to hold this new Lily comfortably, as the huge leaves crowd one over the other to the very edge of the tank. The upturned rim of the leaves in this case seems to be much deeper than in that of the original *Victoria*, but the flowers are of the same form and quite as large. The flowering of this plant is a most interesting occurrence both to cultivators and botanists; it remains to be seen whether it is a distinct species or merely a variety of the original *Victoria*, but whether species or variety it is a valuable gain. Mr. Dickson is apparently particularly fond of aquatics, as he has made special provision for their culture in the spacious and handsome conservatory attached to his residence. At the present time, besides the new *Victoria* just alluded to, there are noble groups of the *Nelumbium speciosum*, the Sacred Bean of India, bearing several large and beautiful flowers, and also the rare *Pontederia* (*Eichornia*) *azurea*, figured in *THE GARDEN*, Vol. XVII., p. 220. This is growing in the same tank as the *Victoria*.

The giant Cow Parsnip (*Heracleum giganteum*) is just now the chief attraction in Mr. Hankey's pretty Surrey garden at Oaklands, Cranleigh. We have seen many gigantic specimens of Cow Parsnip, but the one which Mr. Hankey is fortunate to possess is by far the largest that we have seen. Its flower-stems cannot be less than 14 feet or 15 feet in height, and these carry huge clusters of flowers above and prodigious leaves below. A plant of such noble stately growth as this is not half enough appreciated in gardens. At Oaklands it occupies the further end of a most charming nook, embowered in foliage and backed up by trees. Under such circumstances it is seen to the very best advantage. It is seemingly a favourite plant with Mr. Hankey, as he pays great attention to it and takes care to have successional plants to take the place of the old plants, which die after flowering. A word of caution, however, is necessary with regard to this plant; it is apt to become a troublesome weed if care is not taken to prevent it ripening and dispersing its seeds. One flower-head ripens sufficient seeds to stock dozens of gardens. In this pretty garden there are numbers of other interesting plants, noteworthy among them being some remarkably fine varieties of *Campanula persicifolia*, the finest we have seen;

a pure white form has large bell-like flowers which contrast charmingly with the original purple kind. A beautiful wall garden, or rather a combination of a rock garden and wall garden, though only made and planted a year, fairly teems with interesting and beautiful plants, all in luxuriant health and copious bloom, the result of careful selection and attention. A hardy fernery, too, abounding in a wondrous collection of varieties, is alone worth a long journey to see.

SOCIETIES.

NATIONAL ROSE SOCIETY.

JULY 1.

THE Rose show season was inaugurated on Tuesday last at South Kensington by a magnificent assemblage of this queenly flower, brought together under the auspices of the National Rose Society. The display made on this occasion was as extensive as ever, but it needed only a cursory glance to reveal the fact that the present Rose season is not by any means so good as last year. The late spring frosts, protracted spells of easterly winds, and dry warm weather are doubtless accountable in a great measure for the somewhat inferior quality of the flowers, though it must be admitted that the day was somewhat too early for numbers of exhibitors who probably will show better a fortnight hence. The blight and mildew-breeding weather seemed to be the theme of complaint among rosarians on Tuesday, particularly among those whose rosaries are situated in dry and warm localities. The weather, however, combined with the early date, seemed to have just suited those exhibitors who won the first prizes, as in the majority of cases they far outdistanced their competitors as regards quality of bloom. Teas and Noisettes were throughout the show much better than usual, both from nurserymen and amateurs; they were superior even to the Hybrid Perpetuals, particularly the deep-coloured sorts, of which there was a conspicuous absence of good blooms.

As usual, the schedule was thoroughly representative, and was so framed as to give every cultivator a chance to compete, whether in a large or small way. There were no fewer than twenty-seven classes, and these, without exception, were represented in some cases by as many as twenty exhibitors. Judging by the extent of the show, there must have been as many as five thousand blooms exhibited, but for all this there was quite a lack of absolute novelty, and the gold medal offered by the Society for a seedling Rose not in commerce was not awarded. The show was held in the conservatory, a capital place for a show of this description, as there was ample room for the crowds of visitors to inspect the blooms. The whole of the building was filled with Roses.

Nurserymen's Classes.

Each of the six classes set apart exclusively for nurserymen was well represented, there being even in the principal class for six dozen single trusses five competitors. The first prize in this class consisted of £5 and the much-coveted Challenge Trophy, a handsome piece of plate, which is held by the winner for the ensuing year. The winners of this prize were the Messrs. Paul, of Cheshunt, who were particularly successful throughout the entire exhibition. As this Challenge Trophy collection was considered the most important in the show, we append the names of the sorts which Messrs. Paul showed, the blooms being for the most part of fine quality, and some of superlative merit:—

TEA AND NOISSETTE VARIETIES.

Souvenir d'Elise Vardon
Devoniensis
Niphotos
Maréchal Niel
Jean Ducher

Souvenir de la Malmaison
Mme Camille
Innocente Piro'a
Perle des Jardins
Alba rosea

LIGHT COLOURED HYBRID PERPETUALS.

Mme. Hippolyte Jamin
La France
Mme. Lacharme
Captain Christy
Mme. Fanny Giron
Elie Morel
M. Noman

Merveille de Lyon
Queen of England
Abel Grand
Pride of Waltham
Mme. Eugène Verdier
Lady Mary Fitzwilliam
Queen of Queens

DARK-COLOURED HYBRID PERPETUALS.

Duchesse de Caylus
Mme. Thérèse Levot
Ulrich Brunner
Prince Arthur
Charles Lefebvre
Edouard Morren
Dr. Andry
Charles Darwin
Sénéchal Vaisse
Victor Verdier
Pierre Notting
Reynolds Hole
Etienne Levot
Marguerite de St. Amand
Comtesse d'Oxford
Duke of Teck
Boitdieu
M. Alfred Dumesnil
Grandeur of Cheshunt
Maurice Bernardin
Comte Rambaud
Xavier Olibo
H. Schultheis

M. E. Y. Teas
Mrs. G. Paul
Antoine Ducher
Mlle. Prosper Laugier
Duke of Edinburgh
Mme. Isaac Perrière
Abel Carrière
Duc de Rohan
Countess of Rosebery
Louis Van Houtte
Alfred Colomb
François Michelin
Mrs. Charles Wood
Star of Waltham
Nardy Frères
Mrs. Baker
Edouard André
A. K. Williams
Henri Ledechaux
Sultan of Zanzibar
Pride of Waltham
Horace Vernet

The other prize winners in this class came from widely separated localities—viz., Colchester, Salisbury, and Hereford; their collections were excellent, particularly that from Mr. B. Cant, of Colchester, who usually heads the prize list. He had among his six dozen blooms some exceptionally good, but on the whole not so uniformly fine as the Cheshunt collection. Mr. Cant, however, reversed the order of things in the class for four dozen trebles, he being first and Messrs. Paul second. This first prize collection of trebles included the following fine selection of sorts:—

HYBRID PERPETUALS.

Duke of Edinburgh
La France
Antoine Ducher
M. Noman
J. Hopper
Mme. Ducher
Dr. Sewell
Duchesse de Vallombrosa
Prince Arthur
Mlle. Marie Finger
Boitdieu
Marguerite de St. Amand
Horace Vernet
General Jacqueminot
Jus Margottin
Merveille de Lyon
Etienne Levot

Exposition de Brie
Duke of Teck
Ville de Lyon
Xavier Olibo
Mme. Ferdinand Jamin
Duke of Wellington
Mme. Gabriel Luizet
Annie Laxton
Marquise de Castellane
A. K. Williams
Mme. Clémence Joigneaux
Mme. Lacharme
Prince Cadulle de Rohan
Baroness Rothschild
François Michelin
Countess of Oxford
Victor Verdier

TEA AND NOISSETTE VARIETIES.

Souvenir d'un Ami
Maréchal Niel
Niphotos
Devoniensis
Innocente Piro'a
Jean Ducher

Mme. Caroline Kuster
Catherine Mermet
Souvenir d'Elise
President
Anna Olivier

TEA VARIETIES.—The class for eighteen trusses of Teas or Noisettes was represented by five only, the finest being from Mr. B. Cant, who had an excellent collection, consisting of the following:—

Catherine Mermet
Mme. Willermoz
Devoniensis
Souvenir d'Elise
Mme. Bravy
Innocente Piro'a
Mme. Angèle Jacquier
Mme. Margottin
Perle des Jardins

Moiré
Mme. Cusin
Maréchal Niel
Rubens
Niphotos
Marie Van Houtte
Anna Olivier
Souvenir d'un Ami
Mme. Caroline Kust r

The next best collection, from Cheshunt, was likewise an excellent one, and the third, from Mr. Prince, of Oxford, contained the finest Tea Rose in the whole of the nurserymen's classes. This was a splendid bloom of Jean Ducher, perfect in form, of large size, and richly coloured. It won the silver medal.

The second division in the schedule, consisting of three classes, was set apart for nurserymen not competing in the preceding three classes. The most successful exhibitors in this division were Messrs. Curtis, Sandford, & Co., of Torquay, who won the first prizes in the class for forty-eight, as well as for twenty-four trusses. In both cases their blooms were of exceptionally high quality, large, and well coloured. Their selection of forty-eight varieties included the following:—

General Jacqueminot
Star of Waltham
Alfred Colomb
Duke of Edinburgh
A. K. Williams
Lord Bacon
Ladla
Merveille de Lyon
Beauty of Waltham
Duchess of Bedford
Mme. Charles Wood

Mme. Lacharme
David Pradel
Baroness Rothschild
Marie Baumann
La France
Reynolds Hole
Marie Rady
Jean Ducher
François Michelin
Captain Christy
Le Havre

In this collection the judges found the finest Hybrid Perpetual bloom among the nurserymen's exhibits. This was a splendid bloom of General Jacqueminot, one of the oldest and best known of high coloured Hybrid Perpetuals. It was perfect in form, of exceedingly rich colour, and with petals of great substance. A bloom of Marie Rady on the same stand was scarcely inferior.

The Teas in this division were good. The best of the seven collections of twelve blooms shown was that from Mr. F. Cant, who had—

Souvenir d'Elise	Catherine Mermet
Souvenir d'un Ami	Mme. Welch
Devoniensis	Marie Van Houtte
Maréchal Niel	Moiré
Rubens	Jean Ducher

Amateurs' Classes.

With the exception of a few collections, the amateurs' exhibits were below the average this year; indeed some of the blooms shown were much below mediocrity, and not up to an exhibition standard. The most successful exhibitor was Mr. Haywood's gardener (Mr. Ridout), of Woodhatch Lodge, Reigate, who usually shows so admirably. On this occasion he won the first prize, the Challenge Trophy, offered by nurserymen, for forty-eight single trusses and twelve trebles. In both cases his collections were a long way ahead of his competitors, and his selections were excellent. His best blooms consisted of—

Captain Christy	Mrs. Laxton
Etienne Levet	Jean Pernet
Eugénie Verdier	E. Y. Teas
Horace Vernet	Beauty of Waltham
Mme. Gabriel Luizet	Abel Carrière, and a sport
Abel Grand	from Mme. C. Joigneaux
Marquise de Castellane	(flaked slightly with carmine)
Duchesse de Morny	Duchesse de Vallombrosa
Lady Mary Fitzwilliam	Edouard Morren
La France	Countess of Oxford
Le Havre	Mme. Lacharme
Countess of Rosebery	Chas. Lefebvre
M. Noman	Alfred Colomb
Lady Sheffield	

There were some capital collections of Tea Roses shown in this division, the finest being that from Mr. Hollingsworth, of Maidstone. The next division was set apart for exhibitors not competing in the preceding classes. These classes also were admirably represented, the chief prize winners being Miss Watson Taylor, who showed the best six trusses and the best dozen Teas; and Mr. Pemberton, of Romford, who had the finest two dozen single trusses. Then followed the four classes provided for small growers, who could show twelve, nine, and six trusses respectively of Hybrid Perpetuals and half-a-dozen trusses of Teas. There was a good display in these classes, and some were really fine collections, notably that from Mr. West, of Reigate, who had the best dozen trusses among thirteen competitors. The best half-dozen Teas in this division came from the Rev. F. Page Roberts, of Scole, Norfolk, who also showed the finest 18 trusses of Teas in the extra classes, winning the handsome piece of plate offered for the first prize by the Rev. J. A. Williams. This collection of eighteen Tea varieties was without exception the finest in the whole show, every bloom being large and well coloured, thus indicating that Mr. Page Roberts must be in just the right locality for Tea Rose culture during a dry, warm season. This collection being so fine, we give the names of the sorts shown, which were as follows:—

Anna Olivier	Marie Guillot
Souvenir d'Elise Vardon	Catherine Mermet
Mme. Camille	Caroline Kuster
Perle de Lyon	Marie Van Houtte
Mme. Bravy	Innocente Pirola
Jean Ducher	Mme. Lambard
Mme. Welch	Mme. Margottin
Mme. Hippolyte Jamain	Souvenir de Paul Néron
Niphotos	Souvenir d'un Ami

The other extra class included prizes for baskets of cut Roses arranged for affect, but there were but two shown, and these were considered by the judges to be so inferior that they withheld the first and second prizes, awarding only the third.

Open Classes.

Among these there were three set apart for Roses of particular colours, viz., yellows, crimson, and whites. The best yellow was Marie Van Houtte, the next Maréchal Niel, the third Marie

Van Houtte, while the only other competitor had Maréchal Niel. The class for a dozen white blooms was a fine one, and equal first prizes were awarded to Mr. Cant for a dozen superb blooms of Devoniensis, and to Messrs. Curtis & Co. for a dozen exceedingly fine trusses of the new white Hybrid Perpetual Merveille de Lyon, and Niphotos took the third prize. The best crimson Rose was Marie Baumann, the next best A. K. Williams, to which the third prize was awarded. Star of Waltham, E. Y. Teas, and Charles Lefebvre were also shown in this class. There were no fewer than twenty collections of a dozen blooms shown in the class for Roses of any variety. The best among this number was La France, the next Captain Christy, and the third Marguerite de St. Amand. Other Roses shown well in this class were Catherine Mermet, from Mr. F. Cant (highly commended), Merveille de Lyon, Mons. Noman, Baroness Rothschild, Caroline Kuster, Queen of Queens, Etienne Levet, while La France was shown by seven competitors.

NEW ROSES.—There were, as already stated, no very remarkable new varieties, such as there were last year, when Mr. Bennett won the gold medal with his superb new Hybrid Perpetual Her Majesty. The gold medal on this occasion was not awarded, as there was but one sort shown, that being from Messrs. Paul, of Cheshunt. It was a dark Hybrid Perpetual, which may probably develop into a valuable variety. There were four collections in the open class for twelve new varieties sent out since 1881. The first prize was awarded to Messrs. Paul, of Cheshunt, who had the following sorts:—

H. Schultheis	Baron Nathaniel de Rothschild
Lady Mary Fitzwilliam	Etoile de Lyon
Ulrich Brunner	Mme. Melanie Vigneron
Queen of Queens	Pride of Waltham
Merveille de Lyon	Comtesse de Paris
Grandeur of Cheshunt	
Helen Paul	

Messrs. Curtis, Sandford, & Co. were second with the following:—

Ulrich Brunner (very fine)	André Gill
Comte de Flandres	Merveille de Lyon
Baron Nathaniel de Rothschild	Earl of Pembroke
Mme. Marie Garnier	Admiral Seymour
H. Schultheis	Duchess of Connaught
	Comtesse de Paris

Mr. B. Cant was third with—

Comtesse de Pembroke	Etoile de Lyon (Tea)
Lecocq Dumesnil	Mme. Berthier
Marguerite de Romance	Merveille de Lyon
Ulrich Brunner	H. Schultheis
Mme. F. Bruel	Edouard Gautier
Miss Edith Gifford (Tea)	Leon Say

Messrs. Cooling showed the other collection which consisted of—

Mlle. Mould	Helen Paul
Anicet Bourgeois	Queen of Queens
Lady Sheffield	Comtesse de Camando
Archiduchesse d'Autriche	Comte de Flandres
Gloire de Bourg-la-Reine	Comte Adrien de Germiny
Violette Bouyer	

The amateurs' class for six new Roses was represented by five collections. The best, from Mr. Girdlestone, contained—

Violette Bouyer	Princess of Wales
Comtesse Henriette Coombes	Ulrich Brunner
Comtesse de Mailly-Neale	Miss Edith Gifford

Mr. Pemberton was second with—

May Paul	Pride of Waltham
Mme. Perrière	Archduchess Elizabeth
Helen Paul	Mme. Montet

And Mr. A. Cheales was third with—

Helen Paul	Princess of Wales
Earl of Pembroke	May Paul
Reine Maria Pia	Lord F. Cavendish

BEST SINGLE TRUSSES IN THE SHOW.—In the nurserymen's classes the finest Hybrid Perpetual was General Jacqueminot, from Messrs. Curtis, Sandford & Co. The best Tea was Jean Ducher, from Mr. Prince. Among the amateurs Mr. Girdlestone showed the best Hybrid Perpetual, having a superb bloom of Marie Finger; and the best Tea was found in the Rev. Page Roberts' collection, viz., a very fine specimen of Souvenir d'Elise Vardon. To each of these exhibitors a silver medal was awarded.

BEDFORD PARK NATURAL HISTORY AND GARDENING SOCIETY.

THE final meeting for the season of this society was held on the 28th ult., in the Club Theatre, Bedford Park.

In place of the usual meeting for discussion, the members were invited to send floral exhibits to compete for two prizes offered by the committee, one for the best bouquet of wild flowers, and one for garden flowers grown in Bedford Park. The show proved a very attractive one, although of a miscellaneous character. The tables were loaded with nosegays of wild flowers, garden bouquets, and pot plants, many of which contained finely grown flowers, and displayed considerable artistic taste in arrangement. The prize for garden flowers was awarded to Mr. D. J. Ebbetts, of Blenheim Road, for a large bunch of hardy flowers boldly massed with sprays of Solomon's Seal and Royal Fern, and Mrs. Swinley, the Rev. J. W. Horsley, Mrs. Leigh, and Mr. R. Read were highly commended for bouquets of distinct character. The wild flower prize was awarded to Master Charlie Codd for a naturally arranged vase of flowers and Grasses collected in the neighbouring brickfields; and Mrs. Brooke, Miss Viner, and Mr. Atherley Jones were honourably mentioned. A short address was then given on the origin and distribution of our garden flowers, and on the various ingredients in soils favourable to their growth. The committee is to be congratulated on the growth of this society, for the number and variety of the exhibits and the attendance at the show (upwards of 400) were all that could be desired, and such efforts as this are well worth imitating in other districts where nothing of the sort has been yet attempted.

This society, which was commenced in a very modest way by half-a-dozen residents on the Bedford Park estate about a year ago, has now become a very popular institution, and numbers considerably over 100 members. The object in starting this society was an association for the friendly interchange of information in matters of natural history and the encouragement of the cultivation of such flowers and fruits as are adapted to the place after the manner of old English gardens, and an especial desire is to promote inexpensive gardening, and to revive active interest in the cultivation of simple and old-fashioned flowers.

OBITUARY.

WE have to record the death, at the early age of 49, of Mr. GEO. TOLL, of 358, Stretford Road, and Hullard Hall Nursery, Manchester, an event which took place on the 23rd ult. He had been ailing for some months past, but kept about and attended to his business, though with much less vigour than formerly. Towards the last, however, his complaint (cancer in the throat) assumed a severe form and rapidly completed its work. He took to his bed on Friday, June 20, and three days afterwards was dead. By his special request a number of his more intimate friends amongst gardeners attended his funeral.

Names of plants.—*T. Fox*.—1, apparently *Cattleya intermedia*; 2, *Dendrobium Pierardi*.—*A. K.*—*Iris versicolor*; *Armeria cephalotes* var.; *Dianthus atrorubens*; *Anemone rivularis*.—*J. L. & Amhurst*.—*Saxifraga Cotyledon pyramidalis*.—*D. A. W. J.*.—Certainly not the Rose of Sharon, which is *Hypericum calycinum*, but we cannot name your specimen.—*Subscriber*.—1, *Buddleia globosa*; 2, *Lonicera Ledebouri*.—*A. Rawson*.—*Linaria triornithophora*.—*G. B.*.—A curious monstrous form of the Snapdragon, very uncommon.—*W. Spencer*.—1, *Staphylea pinnata*; 2, *Campanula persicifolia alba*; 3, *Campanula persicifolia*; 4, *Galega persica*.—*J. T. M. (Edinburgh)*.—*Narcissus biflorus*.—*F. W. B.*.—*Calochortus pulchellus*.—*T. R. S.*.—*Odontoglossum cordatum*; *Oncidium incurvum*.—*A. K.*.—*Equisetum Telmateia*; *Sidalcea malvaeflora* (pink); *Philadelphus grandiflorus* (Syringa).—*R. C.*.—1, *Mertensia sibirica*; 2, variety of Spanish Iris; 3, *Maranta fasciata*; 4, cannot name without seeing flowers.—*J. J.*.—A variety of *Campanula Medium* (Canterbury Bell).—*G. Y. & Co.*.—The red is *Minulus cardinalis*, the pink is a variety of the same called rosea.—*Z. B. Watson*.—1, *Lonicera brachypoda reticulata*; 2, species of *Ribes*; 3, *Cheiranthus alpinus*; 4, *Cydonia japonica*.—*G. W.*.—1, *Escallonia macrantha*; 2, apparently *Iris spuria*; 3, *Campanula persicifolia*; 4, variety of a perennial *Delphinium*.—*T. M.*.—1, *Dianthus deltoideus*; probably *D. Sequieri*; 2, seems to be a pale form of *D. caesus*. Specimens of all very poor.

No. 660. SATURDAY, July 12 1884. Vol XXV.

"This is an Art

Which does mend Nature : change it rather : but
THE ART ITSELF IS NATURE."—*Shakespeare.*

THE HAMPSHIRE STRAWBERRY FIELDS.

THE Strawberry harvest is now at its height, and the atmosphere is redolent with the perfume of this luscious fruit. From within a few miles of Botley Station over 1000 tons of Strawberries are annually gathered for the metropolitan markets, to say nothing of what are sold in the locality. The crop this year is not so heavy as that of last season, owing to the protracted drought having seriously affected the lightest and shallowest soils. One thing has been particularly noticeable this year, and that is the way in which the plants in some beds have continued to thrive and look luxuriant even during the most trying periods of the drought, while plants in other beds side by side and on exactly the same kind of soil have drooped and languished, and their produce has been small and flavourless. On enquiry, I have invariably found that the luxuriant-looking beds are the result of deep cultivation, the effect this year being much more pronounced than in more genial seasons, when the plants find moisture near the surface. The soil is naturally light in character, but of considerable depth, and I find that those growers who thoroughly break it up by trenching from 2 feet to 3 feet deep are well repaid this year for their labour, while those who planted on soil dug over in the ordinary manner one spit deep have but very light crops. The reason is obvious; in the trenched ground the roots strike down deeply, and find moisture during even the driest periods, but on simply dug ground, after reaching the hard unbroken subsoil, they strike out horizontally, and during protracted droughts fail just when the strain of swelling the crop is most trying to the plants.

It is curious to note how the soil varies even in the same field, some parts being black peat, others yellowish loam, and close by light shingly soil full of stones. But if deeply broken up, Strawberries luxuriate in all of them, the subsoil just suiting them. I find, too, that owing to this variable character of the soil the season of gathering, brief at the best, is extended; from the lightest and most stony land the earliest fruit is gathered, as the sun's rays warm this kind of soil much more rapidly than the stiffer loams; on the other hand, the stiffer kinds of soil produce the finest crops and the longest in bearing. But when the disparity in the price of the fruit is considered, it is not to be wondered at that growers are anxious to get it into market as early as possible.

The first consignments of 1-lb. punnets usually realise from 2s. to 2s. 6d. per punnet, but the price rapidly drops down to 6d. each, and, as the supply becomes general, to 3d., and when the market gets glutted to 2d. per lb., a losing price, after paying for punnets and expenses attending carriage and marketing, to say nothing in regard to cultivation—a heavy item. The remedy for this glutting of the markets with such a perishable fruit as the Strawberry is obvious, viz., to convert the fruit into jam, for which the demand is un-

limited. A company is even now in course of formation to procure the necessary capital and appliances; therefore, as soon as London market prices fail to pay, the growers will have a ready outlet for the rest of their crop on the spot. Now, after the best fruits have been picked, great quantities of small fruit, really the best for the purpose of preserving, are allowed to rot on the ground. As a preliminary step until the works can be established, it is proposed to convert the fruit into pulp by a process that ensures its being kept in good condition until it can be finally converted into jam.

Should jam-making prove to be a successful undertaking, a great impetus will be given to the cultivation of Strawberries in South Hampshire. Small-fruited varieties like the Grove End Scarlet will doubtless be planted by acres solely for preserving, while at present only varieties that travel well by rail, such as Sir Joseph Paxton and President, are favourites. We cannot hope to compete with Kent and other great fruit-growing counties successfully in Apple, Cherry, or Plum culture, but we can take the next best course, and grow what we find the soil and situation eminently adapted for, viz., the Strawberry. That grown solely as a dessert fruit already affords employment for hundreds of hands, and occupies hundreds of acres, and with the means of converting the surplus fruit into a useful article of food, for which we are still sending vast sums of money abroad, we shall not only benefit the locality, but be doing national work. Home-grown fruits for preserving, in spite of adverse seasons, are making rapid advances, and I anticipate a great future for this industry.

JAMES GROOM.

Gosport.

ORNAMENTAL FRUIT TREES.

THE use of fruit trees, such as Apples and Pears, for decorative purposes in pleasure grounds has been favourably spoken of in THE GARDEN on several occasions, and the only wonder is that these fruits are not more generally employed in this way than they are, especially in small places, such as villa residences in the neighbourhood of towns, where from the limited extent of the ground attached thereto many large-growing, deciduous trees and also evergreens are often wholly unsuited, frequently encroaching upon smaller growing things, which in many cases are of greater importance. Such trees as Elms, Limes, Planes, Poplars, and Beeches, intermixed with evergreen and deciduous shrubs, over-shade them in a few years with their branches, and equally injure them by extracting from the soil all that should go to the support of the weaker growers, the outcome of which is that the lower-growing things, frequently indispensable for privacy, are destroyed; whereas if a collection of smaller trees, such as Apples and Pears, combined with others of a strictly ornamental description, that do not attain a large size, had been planted, the grounds would have maintained the character that they were intended to have, but which was destroyed by want of judgment in the original planting. As already indicated, I would by no means advise the planting to be confined wholly to fruit-bearing trees, as their presence alone would be objectionable in several ways—from the similarity in their habit of growth and the utilitarian character which their presence, if used alone, would convey; but where judiciously introduced the advantage of combining ornament with usefulness is mani-

fest. This is no ideal picture, as I have frequently met with places in which these fruits, as well as Plums, have been freely used with the joint advantage of giving the required appearance with a quantity of useful fruit. So far as many of the small classes of residences are concerned, with their half acre of ground or less, such as exist in vast numbers in the suburbs of London, in not a few cases the builder has encroached on the domain of the fruit grower, and has had sense enough to take some trouble in preserving the trees. This may be seen in the direction of Fulham, Putney, Barnes, and other localities where Apples and Pears were largely grown, and where the healthy, good-sized trees existing have been turned to good account in the way just indicated.

T. BAINES.

FRUIT GARDEN.

NOTES ON STRAWBERRY CULTURE.

WHICH ARE THE BEST VARIETIES of Strawberries for all soils or for particular localities are questions not easily answered, and yet the future success is largely influenced by the choice made. What should be grown either in pots or the open ground ought to be determined according to the requirements or intentions of the growers. Some there are who crop heavily, but the fruits are too small for marketing, or both small and too soft for travelling, while others may yet be large, and therefore more saleable, although of very indifferent quality, especially when ripened in heat. The rather small Black Prince is still one of if not the earliest we have, and a few may well be grown on an early border, and to succeed this for home use the old Keen's Seedling is profitable. Alice Maud, another fairly early sort, is a very heavy cropper, travels and sells well, and is therefore largely grown for the markets. It is, however, of indifferent quality, and I do not recommend it for private gardens. Sir Harry somewhat resembles it, being a very heavy cropper and of a bright red colour, and this again, though attractive in appearance, is somewhat sour and disappointing. Vicomtesse Héricart de Thury is much too vigorous in growth for garden culture, but is well adapted for forcing, being the only variety that ripens to perfection in heat. In the open ground it forms too much foliage, and as a consequence the crops are neither early nor good in quality. La Grosse Sucree, where it can be induced to grow freely, produces early and heavy crops of fine highly-coloured fruit, the quality also being good. It forces well, but the seeds being much imbedded in pulp, this variety cannot be classed as a good traveller. Sir Joseph Paxton is, and always will be, a very popular sort with all classes of growers. Young plants of it produce fairly early crops of extra fine fruit, while the older plants yield immense quantities of useful-sized fruit; in fact, there is no variety I am acquainted with to equal it in this respect. It is also well adapted for forcing, and in all cases the handsome, firm fruits travel well, sell the most readily, and are fairly good in quality. President, again, is much grown both in the open air and pots, and forms a good succession to Sir Joseph. It crops heavily, is the most perfect in shape of all Strawberries, travels well, and is of good flavour. Sir Charles Napier where it succeeds is much liked, but it appears either fickle or of delicate constitution. On some soils it crops heavily, and the fruits, possessing more acidity than the majority of Strawberries, are prized by many accordingly; it is particularly good for pot work. Dr. Hogg succeeds admirably with me, and in some respects I consider it the best sort we have for the main crops. It forms but little superfluous foliage, crops freely, and the extra fine fruits are of the best quality and travel well. The older British Queen also does well here, especially when the plants are about three years old, and this is a Strawberry but few would think of refusing. Un-

fortunately, it is wonderfully fickle, objecting to grow at all in some gardens, and in others requiring to be planted every year. It is good for pot culture. Eleanor or Oxonian is the best cropping late variety I am acquainted with, and during some seasons the fruits are fine and good in quality. James Veitch, Oscar, Cockscorn, and Marguerite all grow to a great size, but none of them are liked here, and I am not particularly favourably impressed with the quality of a few newer varieties I have tasted this season; in fact, I am very well satisfied with the old sorts.

PREPARING POT PLANTS.—Several methods are adopted in preparing the requisite number of plants for forcing, all of which doubtless answer the purpose. We are all inclined to consider our own particular practice the best, but though I give the preference to the plan of layering direct into the fruiting pots, I have had good experience with other plans, and am therefore in a position to comment on each. The most general plan is to layer the runners into 3-inch pots directly after the fruit is picked from the plants, cutting them off when established, shifting the best or as many as are required into 5-inch or 6-inch pots, and forming new beds with the remainder. My objections to this method lie in the fact that we must wait till the crop is gathered and the nets off, many of the best runners being then past the age for quickly rooting. Then, again, the trampling incidental to the layering and subsequent daily waterings greatly injure the permanent plants, especially if the soil be naturally close and heavy. Plants thus obtained sometimes remain in the small pots till badly root-bound, and as a consequence are much weakened, besides being slow to become established in the fruiting pots. Some growers prefer to detach the runners before they have lost their first roots, placing them in small pots under glass to become established, and then pot them off. This plan I am inclined to favour in preference to layering in small pots, but would either prick out the runners on beds of good soil, much as we would Celery plants or in ordinary bedding Pelargonium boxes, keeping close under glass till established, and then giving all light and air possible to prevent their becoming weakly. In this fashion if the runners are placed about 4 inches apart each way, they can each be removed with a good ball of roots and will more quickly re-establish either in the pots or in the open ground. Where much short mulching manure is used on the beds there is seldom any necessity to layer the runners, as a sufficient number of strong plants well rooted into the manure can always be depended upon, unless the beds are unduly trampled in the picking operations. Plants thus easily procured are of the best description either for planting out or pot culture. The plan of preparing pot plants, which we consider the most economical, and which is invariably attended with good results, is that of layering the runners direct into the fruiting pots. This plan, however, is not particularly well adapted if the runners have to be got from the permanent beds. Ours are obtained either from a single row of plants planted close to a pathway or a small bed is formed with a number of previously forced plants. The former are not allowed to fruit, and in both cases we secure a number of early runners which are fixed on the pots of soil before they have formed any strong roots. If the runners lose their first roots they seldom root readily afterwards, hence the necessity for early layering, as the plants cannot well be too strongly rooted in any case. Various sizes of pots are used, ranging from 5 inch to 7-inch and even 8-inch pots, but unless the runners are strong and layered or potted off, I prefer the smaller sizes.

A COMPOST consisting of three parts of strong turfy loam to one part of partially decayed stable manure, with a sprinkling of soot and half-inch bones suits Strawberries. It is a mistake to use dirty pots, neither should they be carelessly drained. Ours have a little of the roughest manure placed over the cracks, and on this a thin layer of soot to prevent the ingress of worms. The latter are apt to be troublesome where the

plan of layering direct into fruiting pots is adopted, and unless they are got rid of with the aid of lime water, they are apt to choke up the drainage to the great injury of the plants. The soil, whether a shift is given or the pots are filled at once for the runners, ought to be firmly rammed, otherwise the greater portion of the roots will reach the drainage, and the good soil be next to useless. Nothing is gained by leaving well-established runners connected with the parent plants, and the sooner they are removed and stood thinly on beds of ashes in the full sunshine the better. At no time should they suffer for want of water, but care must be taken not to over-water those in large pots before they are well rooted, otherwise the fresh unoccupied soil may quickly become sour and unsuitable for the roots. It ought perhaps to be stated that the old forced plants from which we layer runners generally yield a serviceable crop of Strawberries in the autumn, but further remarks on this subject and on planting generally must be deferred till another time. W. I. M.

AMERICAN APPLES.

FOR the following valuable remarks addressed to exporters of American Apples by Messrs. John S. Martin & Co., New York, we are indebted to Messrs. Draper, Covent Garden:—

Before the Apple growers and packers in New York State shall have made their barrel contracts for the crop of 1884, we desire to present for their consideration some suggestions which may be of interest and use. A few years ago New York State Apples occupied the leading position in the trade. They were considered both in local and foreign markets as the best produced in the country and commanded higher prices than the product of any other State either east or west. Of late years, however, there has been a material change in this respect. The State fruit has steadily lost its prestige with the trade, and goods packed in the Western and North-eastern States, as well as in Canada and the provinces, have steadily gained in popularity and have commanded decidedly the highest prices. The quality of the fruit raised in this State is certainly equal to any raised in the country; its decline in favour is due, first to the style of package used, and second to the manner of packing the fruit.

The New York State Apple barrel now generally in use contains about 2½ bushels; it is made with flat hoops and has the unfortunate characteristic of appearing smaller than it really is. Most of the western, eastern, and northern packers use a full three-bushel, round-hoop barrel. To this difference is mainly due the popularity of the latter when in competition with State fruit. Now if a "pony" barrel of Apples could be sold at the same price as a full three-bushel barrel it would be manifestly to the interest of growers to use the former; but that is not the case. There is a very strong prejudice among Apple dealers for three-bushel, round-hoop barrels, and this prejudice is so great that they even over-estimate the actual difference in the quantity of fruit contained. The prices realised for full three-bushel, round-hoop barrels are not only higher than those obtainable for equal quality in smaller packages, but the difference in price is far greater than the actual difference in quantity contained would justify. During the past season, when Eastern Baldwin in round-hoop flour barrels were selling at 18s. per barrel, State barrels containing Apples of equal quality were unsaleable above 15s.—nearly 17 per cent. less, while, considering the State barrel as holding two and three-quarter bushels, the difference in quantity is only 8 1-3 per cent. Furthermore, the use of the three-bushel barrel would effect a considerable saving to State packers in cost of barrels, labour of packing, and freight.

The unpopularity of the style of barrel used at present in this State is especially marked in the export and local shipping trades. Shipping and export orders almost always call for three-bushel, round-hoop barrels, and can be filled with no other style. Some of the principal Apple dealers of this city, finding by past experience that they cannot

profitably handle the State fruit as it has lately been put up, are driven to the necessity of going to other States, west, east, and north, to purchase fruit where it is packed in a manner suitable to the requirements of their trade.

In regard to packing the fruit, there is also much room for improvement, and the fault in this respect is not entirely confined to State packers. A large part of the receipts, especially during the last two seasons, have been "stuffed," the middle of the barrels containing inferior, trashy fruit, topped off with a few layers of good Apples. Buyers soon find this out, and the poor Apples bring no more than they are worth. The stock should be closely graded, the primes and seconds being packed separately and plainly marked. Only one variety should be packed in a barrel, and the kind and grade neatly stencilled on the head. The top layer should show, on opening the barrel, a fair average of the quality throughout the package. Brands which are packed in this manner very soon acquire a reputation among buyers, and command prices which amply repay packers for their care and honesty.

We are convinced, by careful observation of the market, that if State growers will adopt the three-bushel, round-hoop barrel for their crop, and pack their fruit honestly and with careful selection, they will obtain much more money for their product than they otherwise can. Their fruit will be much more saleable, and will speedily regain the prestige with the trade which it occupied a few years since.

NEEDLESS WATERING OF VINE BORDERS.

LINDLEY, in his "Theory and Practice of Horticulture," says, "If you tell a gardener that if he pours water into a tub with a hole in the bottom of it the water will run out as fast as it is poured in, he will probably believe you, but other equally self-evident propositions he will receive with incredulity." This saying of Lindley's always comes to my mind when I read the deluges of water poured on the Vine border, and how one grower emulates another in the quantities which he can pour on in a given time. I believe in giving Vines more water than they used to have, and I advocated copious waterings amongst the first many years ago, but I recognise a limit to the good of it, and regard much of the labour incurred in such excessive waterings as perfectly useless, as I shall try to show. Some years ago I was much amused by reading an account of the quantity of water given to a Vine border because it showed that the waterer was doing what Lindley said was done in the case of the tub. The dimensions of the borders were given and the quantity of water supplied at one time, from which it could be easily demonstrated by a simple arithmetical rule that the bulk of water was nearly equal to the bulk of the borders, and that hence a large proportion of it was poured on with no other result than causing it to run out at the hole in the bottom, otherwise into the drains. A Vine border can hold only a certain quantity of water in suspension at the saturation point even, and by far the largest proportion of that is parted with in a few hours even in the natural ground. Consequently, giving so much water as some say they give is sheer waste of means, as a very little knowledge of hygrometrical principles would convince anyone; but those who periodically record the fabulous quantities which their friends and themselves pour on their borders never look at the subject in that light, and consequently their measurements are of no practical value whatever. I proved the matter to myself once in this way, and made an accurate note of it. I took a flower-pot of the capacity of about one cubic foot, the nearest I could get at least, and filled it full with soil from a Vine border that needed watering. The pot was then set in a basin on an inverted pot, the basin being to catch the water which ran through. One and a-half gallons (6 quarts) of water were then poured on the soil through a moderately fine rose, and after the water had ceased to drip actively from the bottom,

I measured what had run through, and found it to be exactly 1 gallon, 2 quarts having been retained in the soil, which appeared thoroughly saturated. To make sure, however, I poured this gallon of water on to the soil a second time, waited till dripping ceased, measured again, and found it to have decreased in quantity by about half a pint only. Next I turned the soil out, and found it to be saturated to excess in every part and much remaining to run out to reduce it to a natural degree of moisture. It did not occur to me to soak the pot before trying the experiment, and as it was as dry as a burnt brick I have no doubt it absorbed a pint, thus leaving the quantity held by the soil, with still a lot to drain out, to a little over three pints. The remainder of the $1\frac{1}{2}$ gallons represented wasted water and wasted labour. I do not think much harm is done to the roots by giving more water than the soil can hold, and where water is plentiful and easily applied it is best to give plenty, but it is of no use simply pouring it down the drains, thereby wasting the strength out of the soil. In my experiment the water which ran through was the colour of beer, and no doubt contained manurial elements.

J. S.

INSIDE VINE BORDERS.

MR. BAINES has added new facts to this subject, in his remarks on the borders at Lambton, that prove in a remarkable manner the truth of my contention, some time ago, that in order to induce roots to take to inside borders permanently much coaxing and care are needed. The borders at Lambton are, according to Mr. Baines, about equally inside and outside, and have been planted fourteen years. The outside and inside borders were made at the same time, and for several seasons after the Vines came into bearing the extremities of the inside roots were annually lifted and new soil given them. Very well! According to this, which is good practice, these inside borders cannot have been completed more than a few years and ought now to be in good heart, for a Vine border ought certainly to last twenty years at least, as no doubt the outside borders at Lambton will do. But what do we find? Mr. Baines adds concerning these almost newly-finished inside borders: "Early during the past winter the Vines in this range, in the houses containing a mixed lot of sorts, had all their inside roots lifted and new borders given them; in the house devoted to Muscats half the border was re-made, the other half to be done next winter; when lifted these borders were found to be a complete mass of roots, much fuller than the outside borders, which they have always had the same chance of going into." Now the question which will occur to every grower's mind who reads this, and which I want to put as directly as possible to Mr. Baines, is, Why have those inside Vine borders had to be completely re-made almost as soon as they were fairly completed, if Mr. Baines' description of them is correct? But that is not all. Notwithstanding the few roots said to be in the outside borders, we are told at the end that they alone have been equal to the task of carrying the Vines and crops through, "as in their absence the liberties that have been taken with the inside roots would have told on the season's crop!" To sum up Mr. Baines' account, the outside roots, which have not been coaxed or meddled with from the first, have been doing all the work, while the inside roots were being "lifted annually at their extremities," and finally altogether. I am not now criticising Mr. Hunter's practice. No doubt he had good and sufficient reasons for what he did. I only go by Mr. Baines' description, which in other and similar cases has not always been quite correct. All I can say is if Mr. Hunter does not himself believe that Vine roots prefer outside to inside borders, he was educated in a school in which such a thing was thoroughly believed and still is; but it is for Mr. Baines to explain how the annual coaxing of the roots and re-making of the inside Vine borders, which he describes, in any way supports his theory about inside roots. No better evidence could possibly

be adduced to prove the difficulty of keeping roots inside than Mr. Baines' remarks in THE GARDEN last week (p. 532), and I have filed them for future use on that subject.

J. S. W.

LAYERING STRAWBERRIES.

Now is the time to do this, and I would advise all plants, whether for pot culture or for planting in open quarters, to be layered, as it gives them a capital start, and is an advantage in every way. It is a common plan to layer them all in small pots, and many pots are required to do this where large quantities of plants are needed. Indeed, to layer them all in pots often creates such a demand for pots that it cannot be met, and consequently only a few are layered for special purposes. It is, however, easy enough to layer Strawberries without any pots at all. Nor are they in my opinion the best for the reception of Strawberry runners; indeed, I prefer turf to them. Turves which have been stored for a time and which have no grass on them are the best. They should be cut up into little squares 6 inches in diameter, and a Strawberry runner should be pegged into the centre of each piece. Two or three hundred pieces may be cut up in a shed, put in a wheelbarrow, and taken out to the Strawberry quarters. A number of small pegs should also be at hand and a trowel. The latter is used to let each piece of turf into the ground between the rows; then a small hole is formed in the centre of each piece of turf, into which the roots of the layers or runners are put; then they are pressed together and pegged down to keep them firm in the turf. In a few days the roots will find their way into the turf, and in eight or ten days after layering the turf will be one mass of healthy young roots, and the plants ready for either potting to fruit the following spring, or to plant in beds, borders or new plantations of any kind. The roots being all in the small piece of turf without any twisting round, as in the case of pot-layered plants, start into growth when moved more freely than pot plants. I advocate this system from two important points, viz., economy of labour and decided advantage to the plants.

J. MUIR.

Market fruit.—I went into a shop in Bond Street the other day and asked the owner if he had any really well flavoured Strawberries in the place. He said he had only Paxtons; he had a poor opinion of their flavour himself, but they "marketed" well, and the public liked them. I hope that all who have the pleasure or penalty of growing their own supplies will at least take care that what is grown is worth eating, and not merely kinds that "market" well. What is Mr. Laxton about? Can no one raise better flavoured Strawberries than those we already have?—J. D.

Ill effects of syringing with brine.—A lady lately asked me to look at her bush fruits, which had previously been syringed with a solution of common salt for the purpose of killing the Gooseberry caterpillar. They presented a pitiful appearance. The foliage looked as if a fire had been lit underneath each bush and had charred all around it. This was the work of a handy man—not a gardener, I am pleased to be able to say. The caterpillars were certainly killed, but as there was no foliage left to ripen the young wood, the bushes will probably be killed too.—W. J. MURPHY, Clonmel.

Too much mulching.—Some time ago we had some Peach trees bearing very heavy crops, and as we desired that these should swell as quickly and be as satisfactory as possible, we put a thick coating of juicy manure over the surface of the soil above the roots, but, to our surprise, when the fruit should have been swelling it did not do so—indeed, was quite at a standstill. "Stoning," some might say. No; the heavy mulching stopped the action of the roots. On removing this, and forking up the surface soil to admit air and sun, the fruit began to swell rapidly, and the crop, quite checked at one time through too much top-dressing, now promises to be a very good one.—CAMBRIAN.

Strawberry plants after forcing.—It is customary to plant out such plants as have been forced in pots, and the sooner it is done the better chance is there of obtaining a good crop from them the following year. But it generally happens that they are more or less infested with red spider, especially the late crops, and the presence of this pest in any quantity has a seriously deterrent effect on after-growth, especially when hot, dry weather prevails after planting. Red spider may be eradicated by dipping the plants in a solution of soft soap at the rate of 2 ozs. to the gallon, adding a 2½-inch potful of black sulphur to 4 gallons of water. Stir well when using, so that the sulphur is kept well mixed with the water, as it is naturally of a heavy nature and gradually sinks to the bottom. The soft soap sticks the sulphur on so that ordinary rains do not wash it off, and no insect pest that I am acquainted with can withstand black sulphur, but I would caution anyone against using it under glass or on tender foliage. I once dusted some Grapes for mildew with it and nearly every berry was badly rusted. In the open air, however, and on leaves so tough as those of the Strawberry in a mature state, there is but little danger, and in any case it is better to injure a few leaves that way than to allow the whole plant to be crippled by red spider. When badly infested by this pest they seldom do much good, not starting freely into growth until the cool nights of autumn have loosened its hold on the foliage, and then the time is too short for them to make any great amount of growth.—J. C.

Strawberries at Birdhill.—Permit me to add a few lines supplementary to the excellent notes of "J. C. C." (p. 5) with reference to the heaviest croppers. First, as to propagation. Mr. Gough's gardener at Birdhill has anticipated the very proper suggestion of your correspondent to set about the rooting of the runners "at once," as already his are established in convenient triangular sods of loam. The general tendency of late years is to depend to a considerable extent on first year's plants. By having the young plants ready to transfer rooted, say to where early Potatoes were dug out, or from which Cauliflowers were removed in the present month, they are fairly on their course by August, and make very fine stools before growth has ceased in November. I have been through many gardens, and none will be jealous when I say I saw no Strawberries like his this year, and some of the finest were from last year's plants. Rather strange, your correspondent does not mention James Veitch in his list of varieties. Here it is a fraction larger and heavier than President, which is the only one that comes near it in these respects, and Mr. Gough grew last year all Cannell's best varieties from Kent and some old local kinds. I was curious to weigh some fine specimens grown here of James Veitch and found seven berries to turn the scale at one pound. President came next. This result was without any extra forcing or liquid manuring. The soil and situation are all that need be desired; but except early propagation is resorted to and plenty of space allowed, this success cannot be expected. Another variety that crops very heavily at Lord Donoghmore's, Knocklofty, and not mentioned, I may add, is Marguerite; while the flavour is even more satisfactory than that of James Veitch.—W. J. MURPHY, Clonmel.

SHORT NOTES.—FRUIT.

Diseased Grapes (J. W. H. Bradbridge).—Your Grapes are affected by the ailment termed spot, a result of bad health, caused, as most cultivators say, by sudden chills. The better plan is to cut away the affected berries and carefully regulate the temperature of the house.

Strawberry Burghley President.—Mr. Gilbert, of Burghley, has sent us fruits of a Strawberry bearing this name. Some of them measure 2½ inches across, and in flavour are excellent. If the fruits sent are fair samples of the crop, the variety must become a favourite.

Diseased Peaches (S. S.).—The cause of the mildew-like disease on your Peaches is very obscure. In the first instance it may arise from a chill, dampness, dry air, or the contact of some object. The disease is usually (as in your case) accompanied by a microscopic fungus named *Gloeosporium luteicolor*. We know of no remedy; the injury is often but slight. In bad cases the fruit should be gathered and destroyed.—W. G. S.

ROSE GARDEN.

RAISING ROSES FROM SEED.

UPON this undertaking but few have entered, a fact which need surprise no one, seeing that the results to be obtained from it are not of a very enthusiasm-inspiring character. It has already, however, been shown by the large number of new Roses raised in this country that there is a rich reward for those who can work on well-defined lines. Now is the time to help the plants to produce good well-ripened seed; select the largest hips on the strongest branches, and remove all other buds that are showing. It is useless to depend on any particular flowers to form seed. There should be several of each sort or colour set apart for that purpose, nor must the trees on which they are growing be allowed to exhaust themselves too much by maturing too many. It is not necessary to remove all flowers, except such as are intended to produce seed, but it is essential to husband a little of the strength of the plant for seed bearing. It is also desirable to place a conspicuous mark on the flowers selected, to prevent their being removed with other dead ones. The dry atmosphere this year seems to favour the setting of the flowers; therefore there is every likelihood of plenty of seed. It will be found that dark flowers, as a rule, produce more hips than light-coloured ones, and very double flowers comparatively few. Amongst dark Roses that produce hips rather freely I may mention *Maréchal Vaillant*, *Madame Charles Wood*, and *General Jacqueminot*, but such very full flowers as *Madame Lacharme*, *Captain Christy*, *La Reine*, and *Anne de Diesbach* are poor seeders. The most prolific seed bearer with which I am acquainted is *Baronne Prévost*, and amongst kinds with white flowers *Boule de Neige*. Having marked the flowers from which it is hoped to obtain seed, there is nothing else to be done but to watch their progress towards maturity. This will require patience, and the more of this exacted the better will be the hopes of securing seed. In a general way, if the hips show signs of ripening before the beginning of November, they do not contain good seeds, but there is nothing gained by leaving them on the plants after that time. They may therefore be cut off with a few inches of the stem attached to them; the stems may then be stuck into a pot of moist soil, and the pot set in the greenhouse, where they may remain until the hips get the colour of a well-matured Orange when the seed is ripe. It should then be taken out of the hips and kept in a saucer under a thin covering of dry sand. Disappointment must not be felt if every hip does not yield good seed. I have never known all of them to do so. One half of the hips may be full and the other half empty, and some may furnish none at all.

THE SEEDLINGS, too, will in all probability be as various as the contents of the hips. So far as my experience goes, semi-double flowers will be the greatest in number. I have not succeeded in raising varieties superior to those which we already possess, but *Baronne Prévost* and *General Jacqueminot* have reproduced themselves so nearly that they could not be distinguished except by experts. Out of a batch of seedlings, too, there is sure to be some with single flowers of more or less value, and the fortunate raiser of a deep crimson, a pure white, or a delicate pink will be certain to meet with reward—i.e., if equal in quality to Paul's new single scarlet, which is fast making its way to the front. When a distinct variety in each colour is obtained we may hope for still greater departures in both form and colour, as there is less difficulty, according to my experience, in manipulating single flowers for the purpose of fertilisation than double ones. There is not a large percentage of vigorous growers obtained from a single batch of seedlings. Many of them come very weakly, and the dark-coloured sorts more so than the light ones. In such a case it is impossible to decide on the merits of the flowers produced.

SOWING THE SEEDS.—I have always sown in deep pans in February, and kept the pans in a temperature of about 55° until the weather made it warmer naturally, and I have always found that the plants came up very irregularly, some appearing at the end of six weeks, while of others nothing was seen for from ten weeks to twelve weeks longer. There is therefore some difficulty in dealing with the young plants, but to let them remain in the seed-pan until all are ready for removal entails a loss of time; so I recommend that when any of them has grown to a height of 4 inches, they should be carefully lifted, potted singly, and placed in a cool warm house for two or three weeks to get them established; then afford them a cold frame. If, however, I was desirous of securing the earliest and best results, I would have a hotbed made of a good body of leaves ready to sow the seed on at the end of March; on this I would put a two-light frame and 9 inches of good soil on the leaves to receive the seed, which should be in lines 4 inches apart each way. In five or six weeks the first plants would be peeping through the soil, and as the season would be advancing warmer weather would enable the cultivator to increase the quantity of air and moisture afforded them, but the frame should be kept closed at night up to the end of June, and the young plants should be shaded from very bright sunshine. To encourage a quick growth both plants and the inside of the frame should be syringed at closing time. After the end of June more air should be admitted both night and day for a month, after which the lights may be removed altogether, but the roots must be attended to as regards moisture. During winter the lights should be put on the frame, and a lining of leaves or litter should be put round the sides and ends to keep out severe frost. The lights, too, should be covered in frosty weather. The plants ought not, however, to be coddled, but, on the contrary, should have plenty of air in mild weather. The weather must decide when they are fit to bear removal in spring. Generally speaking, it will be safe to move them by the middle of February, but if it should be very cold it will be better to wait a fortnight longer; then lift them carefully, put them in 3-inch and 5-inch pots, according to the sizes of the plants, and replace them in the frame, keeping them close for a fortnight and the lights covered at night. Another way is to prepare a place for the frame on a south border where the soil is moderately rich, and after placing the frame on it take up the plants and put them in the frame in lines 8 inches or 10 inches apart, according to their numbers. For the next few weeks keep the frame rather close, and only give air in mild weather. In April, as the sun increases in power, more air may be admitted, and this treatment should be continued in suitable weather until they can bear the lights off during the daytime, which will be about the middle of May, and at the end of that month the frame should be taken quite away. At that time many of the plants should be making good progress, and the strongest may be expected to flower during the summer. Those put in pots may remain in the frame, but it is desirable that they be all shifted into 6-inch or 7-inch pots as they fill the others with roots, for it is impossible to judge the merits of the flowers if the plants are confined to small pots. The most satisfactory way, however, is to plant them out and let them flower at their own time.

J. C. C.

THE MANETTI ROSE.

FEW probably think of growing this as an ornamental plant, and yet I doubt if the choicest variety in cultivation can produce a more pleasing effect than this single kind does when allowed unrestricted freedom of development. I have been much gratified lately with the quite charming appearance of several large bushes of the *Manetti* growing in our village churchyard. One ought not, perhaps, to be gratified when a choice Rose dies, but I certainly own to feeling pleased that the death of several good varieties gave birth to a form of beauty such as few double Roses could produce. The soil of our churchyard is not rich,

and when some years ago the experiment was tried with the view of inducing good Hybrid Perpetuals to grow and bloom there in a border some 12 inches wide with no more nourishment than the soil itself naturally furnished, the plants refused to grow, bloom, or even live under such disheartening circumstances. Luckily, however, they were on the *Manetti*, which evidently found the position congenial to it, and quickly grew up into large bushes, some 10 feet high and nearly as much through, and which, not knowing the knife, have grown as Nature intended them to do. They are therefore just as irregular in outline as the common Dog Rose of our hedges. Even although they have nothing but the poorest of soils to grow in, they show no signs of declining vigour, but promise to be things of beauty for many a year to come. Looking at these Rose bushes, so healthy, so full of pretty bloom, so happy in adverse circumstances, and all this with absolutely no care, I could but think that in trying after what is too often the unattainable we neglect the most simple and effective means of embellishing our gardens. There are so many plants which, grown on Nature's plan only, giving them the position they like best, and leaving them alone, would prove so highly satisfactory, that the wonder would seem to be that we should often take so much pains for such a slight recompense. The *Manetti* is not the only single-flowered Rose which is suitable for growing as untrained unpruned bushes. There is, for instance, the *Ramanas*, alluded to in a recent number of THE GARDEN, and many others. How fine a sunny bank would look dotted with them, or better still planted in irregularly formed groups. This is a phase of wild gardening which deserves the attention of those who have space for carrying it out, and Roses on the grass would form a charming feature in any garden.

JOHN CORNHILL.

Byfleet, Weybridge.

Old-fashioned Roses.—Mrs. Maxwell Williams has sent us a charming collection of these from Kirkconnell, New Abbey, Dumfries. Though many of them are little more than semi-double, they are very beautiful and some of them as highly coloured as *General Jacqueminot*. It is to be hoped that these old Roses may long exist in old-fashioned gardens if not in new ones.

White Roses.—In addition to the sweet-smelling white flowers named in THE GARDEN of May 3 by "J. C. C.," the following white Roses may be useful—viz., *White Provence*, *Comtesse Murinais* (Moss), *Old White*, *Madame Plantier*, *Madame Hardy*, *Madame Legras*, *White Scotch*, and Hybrid Perpetual *Mrs. Bellenden Ker*, which is almost white. These are all very sweet scented.

—D. J.

Rose Celeste.—Will "Veronica" kindly put me right as to the character of this Rose? I purchased two Roses for the old Maiden's Blush, which I think must be that variety. The Maiden's Blush is merely a blush sport of the old white or alba Rose, differing from its parent only in colour and slightly weaker growth. In the cottage gardens here are Roses which are intermediate. The Rose which I think must be *Celeste* has not the decided alba foliage, and is a much dwarfier bush, but the principal difference is that the wood is without prickles. The only description I have of *Rose Celeste* is in these words: "A beautiful Rose in bud; afterwards its charms diminish"—which is an apt description of the flowers of my plants. The opening buds are more beautiful than those of the Maiden's Blush, but when the flowers expand the deepening of the colour towards the centre disappears, as well as the flesh tint; the pink on the flower takes a disagreeable shade, becomes irregular, and sometimes freckled; the outer petals bend back, while the inner ones remain cup-shaped, giving the flower the profile of two shallow cups bottom to bottom. The Maiden's Blush, on the contrary, keeps its colour until fully expanded, and remains a blush Rose, only assuming a peach shade when old. In Mr. W. Paul's catalogue *Celeste* and the Maiden's Blush are named as identical.—J. D.

WINDOW GARDENING IN WESTMINSTER.

THE eighteenth annual flower show in connection with the Society for Promoting Window Gardening amongst the working classes in the united parishes of St. Margaret and St. John, Westminster, took place on the 3rd inst. beneath a marquee in Dean's Yard. The increase in the number of exhibitors and the improved character of the exhibits testified to the good that has been done by the dean, the rectors of the two parishes, and the incumbents of the district churches, in fostering a love of flowers, and the praiseworthy enjoyment attending their cultivation. This year the number and quality of the flowers showed that the movement is still healthily progressing. Fifteen prizes of 10s., 7s. 6d., 5s., and 3s. were given for Fuchsias, Pelargoniums, and other plants, divided into two classes; the first being for working men and women who have no space but their window-sills or by encroaching on their already deficient room accommodation, and the second for children in schools. In addition to the general, there were 126 local prizes, varying from 5s. to 2s., apportioned among the nine parochial districts into which Westminster is divided. These local prizes were for the same plants and divided into the same classes. A thousand or more exhibits were tastefully arranged on a stand occupying the centre of the pavilion, and exceedingly meritorious they were considering the difficulties under which they had been grown. In addition to the plants for exhibition there was an excellent display of cut flowers, including some magnificent Roses kindly given by the nobility for presentation to exhibitors. The Earl of Shaftesbury, after presenting the awards, with a few kindly words to each recipient, said at one time there was a good number of such shows in London, but they had fallen off. He was happy, however, to find that they were now reviving. He had already attended two or three this season, and he had three or four more in prospect, and he was glad of it, because he delighted in the objects which actuated their promoters. He knew of nothing that was more beneficial to the mind and taste than flower culture.

NOTES OF THE WEEK.

The Board of Management of the World's Industrial and Cotton Centennial Exposition, to be held in New Orleans during the winter and spring of 1884-5, announce to all persons interested in horticulture and pomology throughout the world that they have organised a department of horticulture, for the purpose of making the most comprehensive possible exhibition of the valuable fruits and plants of all nations. The organisation of this exhibition has been placed in the hands of a committee appointed by the Mississippi Valley Horticultural Society, consisting of Mr. Parker Earle, Cobden, Illinois; Mr. P. J. Berckmans, Augusta, Georgia; and Mr. Chas. W. Garfield, of Michigan. In order to provide proper facilities for so important an exhibition, a large and beautiful building, coloured lithographs of which have been sent to us, is now being erected. Its walls and the greater portion of the roof will be covered with glass, and specially adapted to the exhibition of both fruits and plants. This building will be 600 feet in length, and will have an average width of 114 feet. It will furnish table room for 25,000 plates of fruit and 40,000 feet of space for the exhibition of plants. Apartments with suitable heating arrangements for the care of greenhouse and stove plants will be provided. Extensive space has also been assigned to this department in the beautiful grounds adjacent to the horticultural building for the planting of large exhibits of trees and plants. The Government of Mexico will fill five acres or more of this space; the states of Central America, the state of Florida, and many other states and nations it is expected will exhibit here their sylvan and floral wealth. A varied and liberal schedule of premiums for fruits and plants has been prepared, and exhibitors from every state and nation may feel assured that this exhibition will be managed throughout in the most liberal

spirit. This schedule, containing regulations for the horticultural portion of the exhibition, may be had on application to any of the Board members whose names we have just given.

Royal Horticultural Society's winter committee meetings.—It has often occurred to me that these are twice too few, being one month between each, and I have at last determined to ask my brother Orchid growers to help me in making a petition to the Society to hold its meetings of floral, if not fruit and scientific, committees twice a month in winter as in summer. There are many doubtless who would have had plants to exhibit for certificates of the various denominations had there been a second meeting in each month who like myself have been obliged to wait another year for it, and then perhaps some one else blooms the plant and gets it certificated before the owner who bloomed it a year ago, but whose plant was not shown from want of a chance of doing so. Personally speaking, I have two years in succession bloomed a plant in January just too late to catch the meeting, and of course in a month the flowers were faded and utterly unfit for exhibition. This is experienced by many I know, and if they and all others will write to me who approve of the action I purpose to take, I will get a petition formulated and send it around to them for their signatures, begging the Society to commence with 1885 by holding fortnightly meetings of the various committees throughout the year. In the interests of all concerned, and those of the Royal Horticultural Society itself, I think it would be a great step forward. I hope that those interested in fruit culture will also second me; if they do, I shall be very much gratified to see I have also struck their nail on its head.—DE B. CRAWSHAY, *Rosefield, Sevenoaks, Kent.*

PLANTS IN FLOWER.

Sweet Williams—We have received from Mr. Baylor Hartland examples of white Sweet Williams, single and double. Both are handsome and suitable for bouquets, especially the double kind.

Doronicum Clusii.—How good this plant has been this season no one who has not seen it can form an idea. The warm and dry weather has enabled it to fully develop its large and brilliant golden blooms. Flowering abundantly and for a long time in succession, it is a most useful plant for the back line of herbaceous borders, as it grows about 4 feet high.—J. T. Poë, *Riverston.*

Saxifraga Burseriana **Boyd** is a bright primrose-yellow form which I saw the other day in Mr. Munro's Abercorn Nurseries, near Edinburgh. It is very free flowering, and more easily grown than the type. It was raised by Mr. Boyd, of Cherrytrees, near Kelso, about three years ago. Some of the plants from the same batch of seedlings have the habit and white flowers of *S. Rocheliana*, so this yellow Saxifrage may possibly be a hybrid between *S. Burseriana* and *S. Rocheliana*, but whatever its origin, it is a distinct and beautiful rock plant.—C. M. O.

Gentiana bavarica.—I send some flowers of this Gentian which were grown in my garden at Floore. I have taken some trouble in cultivating this plant, and almost venture to hope that I have at last succeeded. You will see that the flower-stems, besides being a good length, are also stout and strong, and the flowers are a fair size and splendid in colour. The hot weather has, however, caused them to fade very much. The plants have been growing for three or four years on a raised stony bed, under which is a thick layer of peat.—E. G. LODER.

*** Evidently well grown; but the flowers were quite withered up when they reached us.—ED.

Two handsome climbers.—I send you some flowering shoots of *Quisqualis indica* and *Stigmaphyllon ciliatum* from Earl Annesley's garden; they are planted against the back wall of a Gardenia house, and have been flowering for nearly two months. The *Stigmaphyllon* is nearly

over, but the *Quisqualis* will continue flowering on for the next three months to come. Both are beautiful climbers that one seldom meets with; they succeed very well in a temperature of about 50° during the winter months.—T. RYAN, *Castle nellan.*

*** The *Quisqualis* has ample foliage, some 6 inches long and 2 inches wide, and handsome terminal and axillary spikes of flowers which change from white to red. They are borne on long slender stalks, and have a very graceful appearance. Of the *Stigmaphyllon* some account was given in *THE GARDEN* recently. It does not seem to travel well, for it had lost all its pretty yellow flowers when it reached us. Both are interesting climbers, especially the *Quisqualis*, and should be much more common in gardens than they are.—ED.

Jamesia americana.—This is a plant seldom seen outside botanical gardens, yet it is just now among the most attractive, being in full flower. It is a native of the Rocky Mountains and forms a dwarf bush, every shoot of which is terminated by a drooping cluster of pure white blossoms, borne in such numbers that the whole plant appears at a distance to be a mass of white. It is interesting also from being a shrubby member of the order Saxifragaceae. It is quite hardy, provided it is in a well-drained spot.—ALPHA.

Campanula alliariæfolia.—This is a most distinct and desirable member of a very numerous family, and one that is not met with as often as its beauty deserves. An established plant of it in the herbaceous border here has been for some time a striking object, with numerous stately, erect spikes of well-formed bells of the purest white. The flower-stems are about 3 feet 6 inches in height and the spike of bloom 2 feet 6 inches, resembling the bloom of the white Foxglove. The foliage, too, is handsome and distinct, forming a pyramid of large cordate leaves.—J. T. Poë, *Riverston.*

Double Sunrose.—I send you flowers of a seedling *Helianthemum*. I fancy the yellow shade of the double flowers would prove effective on a good-sized plant, but what appears to be most noticeable are the flowers in from fives to tens on a spray. I grow some 18 kinds of the Sunrose, and few that I know, either double or single, show colour in more than three or four on one spray at the same time. The specimens sent have also lasted longer than the ordinary run of these fugacious flowers; they have endured two days' thunder storms, and consequently are spoiled. The plant has large leaves, and came self-sown in a pot of *Convolvulus soldanellæfolius*.—J. WOOD, *Kirkstall.*

*** The flowers sent were not in a condition to enable us to judge of their merits.—ED.

Hardy plants near Edinburgh.—In Mr. Munro's nursery hardy plants of special interest may always be found. Amongst Irises I noticed *I. pallida*, perhaps the loveliest of all; *I. versicolor*, a small Iris resembling the latter in habit and size of blossom, but blue, not purple; *I. florentina*, *I. cœrulea*, *I. tomioloïpha*, of somewhat dwarf habit; and a very tall Iris (possibly *I. ochroleuca*), the leaves of which Mr. Munro says sometimes reach several feet in height in a favourable position. The flowers are yellow, but it is not in blossom just now. The old Highclere Mule Pink raised by Dean Herbert is to be found here, also a very pretty Pink for rockwork, *Dianthus Simi* fl.-pl. Amongst other good rock plants is a bright rose-coloured Thrift (*Armeria grandiflora*), a variety which makes a good companion to the rare *A. cephalotes* alba, but of dwarfer habit and prettier foliage.—C. M. O.

Stephanotis floribunda.—From Mr. R. H. Vertegans, Chad Valley Nurseries, Edgbaston, Birmingham, comes a charming wreath of *Stephanotis*, and along with it the following remarks: "So much having been said and written about the varieties of *Stephanotis*, I have sent you a spray off the same plant from which I sent a cluster some three years ago, to show you that it still retains its free blooming character. It now covers

the north side of a span-roofed house 40 feet by 18 feet, and is covered with clusters of flowers similar to those sent. I think when it is known that a temperature of from 40° to 55° during winter is sufficient for this delightful climber many will be induced to grow it who at present are under the impression that a stove temperature is necessary." Nothing could be finer than the 15 inches of spray sent, closely furnished with flowers. Mr. Vertegans proposes to call this *Stephanotis* the Chad Valley variety.

Hesperaloe yuccæfolia.—This interesting and rather handsome plant is again flowering in Mr. Ware's nursery at Tottenham, where it is represented by several strong plants bearing spikes of Aloe-like flowers some 4 feet in height. The singular appearance and structure of the entire plant has suggested the opinion that it represents the characters of Agave, Yucca, and Aloe merged in one—in fact, Torrey, who found it in Mexico, called it a Yucca; and Dr. Gray, who described it in the "Proceedings of the American Academy," named it Aloe; whilst Engelmann found in its flowers characters that suggested those of an Agave. In addition to its botanical interest, *Hesperaloe yuccæfolia* possesses ornamental and lasting characters, which should be sufficient to recommend it for garden purposes. The habit and foliage are not unlike those of *Yucca filamentosa*, and the flower-spike, which is tall and branching, bears numerous reddish tubular flowers, which are produced so freely and last so long, that it may be said to bear flowers during about half a year. In addition to its growing in a cool greenhouse it is also planted out on the rockery in the Tottenham Nurseries, and so far it has shown no signs of any ill effects from exposure. We may therefore hope that it will ultimately prove to be hardy enough to stand out of doors altogether in a sheltered sunny position.

Water Lilies at Kew.—Attractive as was the collection of these beautiful aquatics in the Water Lily house at Kew last year, the display of flowers and vigour of the plants are far better this season. No doubt the removal of the tall Grasses and other large plants which last year were stood rather thickly about the tank in which the Water Lilies grow has been conducive to this season's success with the Lilies, for where an abundance of sunlight is not obtainable, the satisfactory cultivation of *Nymphæas* is almost impossible. With the exception of the noble Paper Reed (*Papyrus antiquorum*), which is planted out in a large bed in the centre of the tank, and is now in fine condition, there is nothing but *Nymphæas* and other aquatics in the tank, and the effect is much more pleasing, because of its being less crowded than it was. There is now a large sheet of water covered with the leaves of the Water Lilies, above them rising the large beautiful flowers of a rich collection of species and varieties. Unfortunately for the public, the majority of these flowers are closed by mid-day, from 9 o'clock to 11 o'clock in the morning being the time when the whole of the kinds may be seen fully expanded. The following are now in flower, viz.: *N. stellata*, *N. s. scutifolia*, *N. s. cyanea*, *N. s. zanzibarensis*, *N. Lotus*, *N. L. dentata*, *N. L. rubra*, *N. L. Ortigiesiana*, *N. L. Devoniensis*, *N. odorata* var. *rubra*, *N. Daubenyanæ*, *N. ampla*, *N. alba* var. *candidissima*, and several varieties not yet named. The yellow-flowered species, *N. flava*, has not yet commenced to bloom, although the plants are in good health. In the same house the *Nelumbiums* are now bearing many flowers. Altogether this house is exceptionally attractive just now.

Lilium Harrisii.—A fine specimen of this Lily, now in flower in the Cape house at Kew, has a stout stem 3 feet high bearing five flowers of the purest white, and each one measuring 8 inches in length and nearly the same in width. That it is identical with *L. longiflorum* var. *eximium* may now be considered a settled point, Mr. Baker having expressed his opinion that there is no difference between the plants bearing the two names, so far, at least, as the Kew plants may be considered to represent the true *L. Harrisii* of gardens. Unlike the old and common type *L. longi-*

florum, which both in England and in its native country, Japan, as well as in China and India, is one of the best known and most useful of Lilies, the above variety is not satisfactory unless treated as a cool greenhouse plant. In addition to its large size and purity the variety *eximium* is specially useful for early forcing, as has been proved this year by several market growers, by whom large quantities were had in flower as early as February and March, a fact which, taken together with plants of it being in flower at the present time, shows its value for growing in successional batches for cut-flower and decorative purposes. Another remarkable and valuable character possessed by this variety is that of producing several secondary stems from those first matured, and these flower quite as profusely as the first produced stems. That the merits of this Lily for garden purposes are of an exceptionally high order has been proved within the last two years, during which time large quantities of bulbs of it have been imported under the name of *L. Harrisii*. It is a plant that deserves to have a place in every garden where its simple requirements can be met. Is *L. Wilsoni* the same as *L. Harrisii*?

Passifloras at Kew.—Amongst the numerous species of *Passiflora* there are many beautiful flowered kinds, but rarely met with except in botanical collections. At Kew the number of species represented is exceptionally large, and it may be said that many of them are not such as would find favour with any but specialists. We noted a few weeks ago the flowering of *P. quadrangularis*, which up to the present time has continued to produce its large handsome blossoms in the Palm house. In the same house the rare flowering *P. laurifolia* is now in bloom. From the axils of its Portugal Laurel-like foliage the rather large green-petalled flowers are produced, and with the exception of the colour of the petals there is a close resemblance between these flowers and those of the first mentioned species. *P. hybrida* is a rose-coloured, large-flowered, and very floriferous kind; *P. Belloti* very much resembles *P. quadrangularis*; *P. racemosa*, sometimes called *P. princeps* and *P. corulea alba* are other noteworthy species which are now in flower at Kew. The Australian kinds, *P. cinnabarina* and *P. incarnata*, are represented in the Cape house, and in the porch leading to the Water Lily house a strong plant of *P. edulis* is bearing a large crop of Green Gage-like fruit. *P. corulea* is represented in various houses, as well as out-of-doors, by plentifully flowered plants, thus demonstrating the value of this kind for general cultivation, for whether in a tropical house or out-of-doors it appears to be quite at home. We should like to see the beautiful *P. vitifolia* under the same happy conditions as those above mentioned. This species grows freely, but its rich cinnabar red flowers are not always freely produced. An intermediate house would most likely prove the most suitable place for it.

Brodiaea volubilis.—Along with the species of *Brodiaea* mentioned in our last week's issue as being in flower at Colchester, we saw the other day, in the Tottenham Nurseries, a clump of *B. volubilis*, which is not only one of the most remarkable plants of the genus, but one which may be said to be the most singular of the large Liliaceous order of which it is a member. From a bulb and tuft of radical foliage of similar character to those of other members of the genus a tall flower-stem is developed, which in thickness may be compared to a goose-quill. It is, however, the anomalous length and twining nature of this stem that give the plant such an extraordinary appearance. The Tottenham plants are surrounded by a Pea-stick-like hedge, and, twisting round and round the twigs and stems of this, the flower-stem is prolonged until it reaches the top, where the Allium-like head of flowers is expanded. Measuring along the stems, some of them were over 8 feet in length, and we learn that flower-stalks more than 12 feet long have been produced at Tottenham. The purpose which this strange behaviour is apparently intended to serve is to enable the plant to send its flowers beyond the

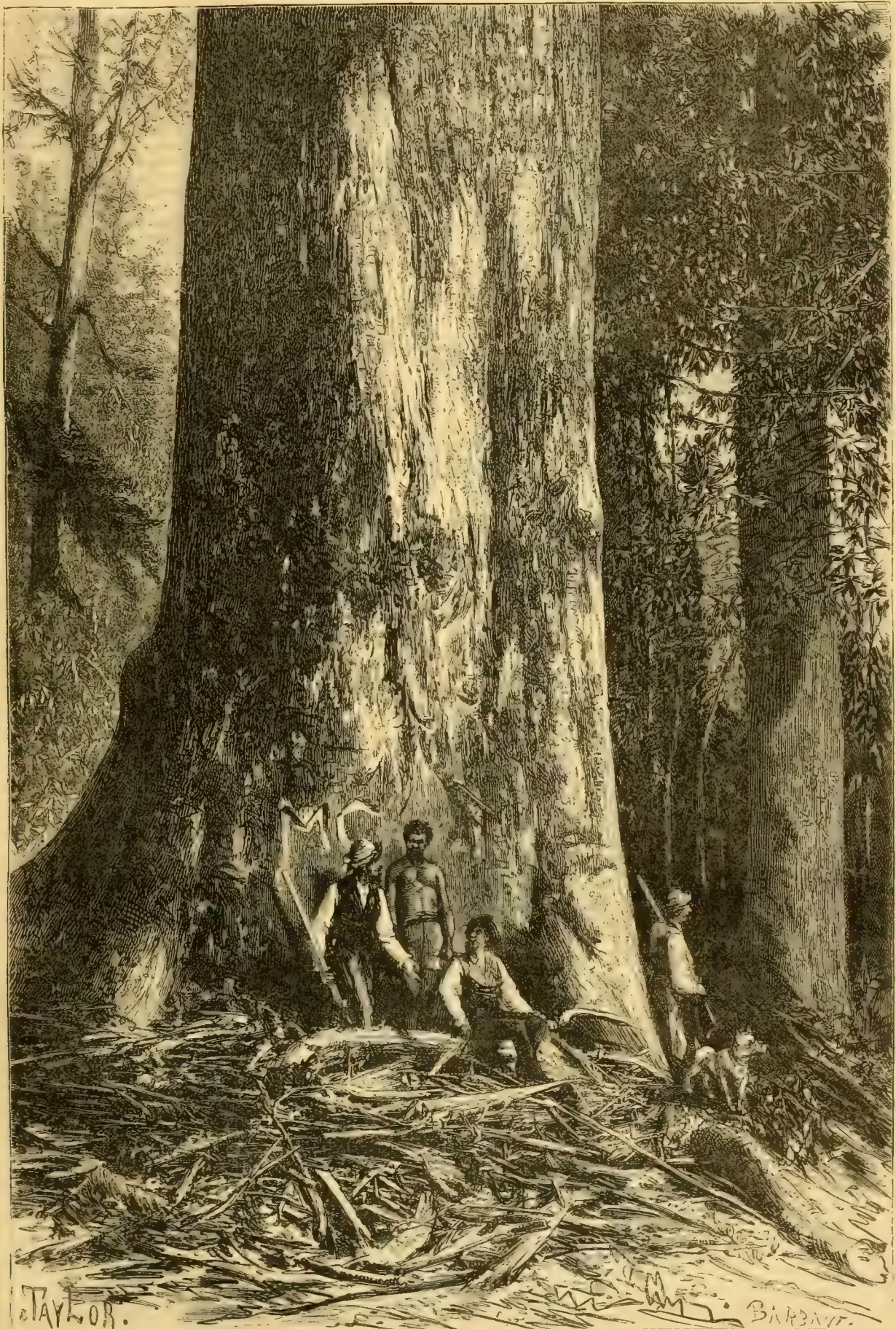
shade of any shrubs beneath which it grows, so that fertilisation may take place in sunlight. In the whole vegetable kingdom we are acquainted with but one other plant that possesses a character resembling that of the above *Brodiaea*, and that is *Vallisneria spiralis*, which, as everyone knows, has a very long spirally-twisted flower-spike, by means of which its flowers may be prolonged many feet from the bottom of deep water streams until they float on the surface, where fertilisation is accomplished. In our opinion this *Brodiaea* is a truly wonderful plant, and in addition to this it is a handsome flowering species of a popular genus of garden plants.

TREES AND SHRUBS.

IN AN AUSTRALIAN FOREST.

ALL the world has heard of the big trees in California of which Americans so proudly boast, telling us that they are the biggest trees known; but it is not everybody who believes that our Australian colonies can point to trees in the moist and rich valleys of the Australian Alps that far surpass the Californian giants in height, though in girth they fall far short, as the *Eucalyptus* trunk does not swell out towards the bottom of the bole, and its bark, which in most species is annually shed, is as thin as that of the *Wellingtonia* (I beg our American cousins' pardon), *Sequoia gigantea* is abnormally thick. A glance at the annexed illustration will show the beauty there is in an *Eucalyptus* forest, and yet there are folk who would try and persuade us there is little or nothing beautiful in a Gum tree. Australia is a country of extremes; there are tracts of hideous desolation, huge waterless plains which it is death to attempt to cross, for a thousand miles may be traversed without meeting one rivulet, and for all this there are regions where the soil is so rich and the rainfall so abundant, that vegetation may be found still perpetuating the exuberant growth and beauty of the epoch that filled our coal measures. It is a pretty thought that the Myrtle we so prize, and which grows wild so abundantly in Southern Europe, is the sweet and sole representative in our hemisphere of the great family of *Eucalyptus*, or Gum trees, which reaches to such a colossal height in the southern hemisphere, and all who have smelt and appreciated the scented air of an Australian forest enjoy doubly the touch of astringency in the perfume of a crushed Myrtle spray.

Comparisons, as Mrs. Malaprop tells us, are "odorous," so we will not do more than hint at the bareness and desolation round the mighty boles of the Californian *Sequoias*, whose tufted branchlets cling so closely to the mighty mast, that verdure or shade there is none, so to say. "How different in an Australian forest where the giant white or blue Gums grow." True it is that the trunks tower up, may be, 250 feet before they branch into a head that looks small to those who are down below, yet that head would be gigantic were it nearer our eyes; true, also, that the leaves hang vertically (as do the branchlets of the *Sequoia*), and so but little filtering of the intense sunlight is accomplished by them; but then instead of barrenness beneath, we first have towering *Sassafras* trees with dense evergreen foliage and delicate Azara-like sprays of growth, tipped with tiny pink bells; next come tall evergreen shrubs with large and shining leaves, as handsome as any Bay tree or Portugal Laurel; and yet again the feathery heads of Tree Ferns (*Alsophila* or *Dicksonia*) fill up the vacant spaces between each tree, till the wonder is how so much can grow together. In their turn, the Tree Ferns are clad with Mosses and Filmy Ferns, so that as you struggle through this tangle, the last remaining survivors of vegetation of former epochs explain mutely how in the struggle for existence the most perfect beauty exists only where the conditions of life remain as they were first created; destroy but one link, or introduce some too robustly constituted European weed, and slowly, but surely, all this old world beauty disappears. It is well, then, to obtain and to keep anything that may give an idea, however small, of that thing of beauty—



TRUNK OF A LARGE GUM TREE AS SEEN IN AN AUSTRALIAN FOREST.

an Australian forest. In using the expression "old world," I would explain, for fear of being misunderstood, that Australia west of the Alps or Blue Mountains, with the most trifling exceptions, has never been submerged, hence it is that the plants of our coal measures survive there alone.

Another strange feature in the Australian forests is the indestructibility of the fallen trees, owing to the hardness of their wood, so that whole valleys may be found where the fallen trunks of past ages bridge over, as it were, with a false bottom, the streams that flow hidden beneath. Covered with Hymenophyllums, and even big Tree Ferns, the traveller walks on boldly in ignorance of the pitfall below, till a slip or a chance peep into an opening reveals to him the insecurity of his position. Such moist and dark recesses are the haunt of many a snake, and woe be to that stranger who unwarily should fall into those airless and slimy regions. Perhaps, save for this, it were too like Eden. E. H. W.

NEW MAGNOLIA.

It may be of interest to your readers to know that we have just flowered a new Magnolia. It somewhat resembles *M. parviflora*, but is sufficiently distinct to establish it as a species. It has a more cordate leaf and longer footstalks than *parviflora*. The upper side of the leaf of the latter is smooth, while that of the new one is velvety. On the underside of the leaf of the new one there are brown hairs, and the veins are more prominent. The flower is about the same size as that of *parviflora*, but the petals are more transparent and clear pearly white, while those of *parviflora* are creamy. It has not so much of the Banana fragrance as *parviflora*, and some might think its perfume more delicate. The calyx is broader and shorter than in *parviflora*; the pistil, too, is of a delicate very light green, longer and thicker than that of *parviflora*. The centre cluster of stamens is bright carmine without that dark vermillion at their base and the white and carmine markings on the underside, which make *parviflora* so beautiful. The differences I have noted between these two plants are sufficient to make each a distinct species, and either of them may safely be said to be unsurpassed among hardy flowering trees. In colour, form, and fragrance they approach nearly perfection. Both these species were introduced here from Japan by Mr. Thomas Hogg, who brought us many things which are each year developing their character. Among them were some twenty varieties of Japan Maples, which grow here with the greatest luxuriance. *Acer carpinifolium*, one among these, is very interesting, both to the amateur and botanist, but, like many other good things, it is very impatient of propagation. To Dr. Hall we were indebted for *Magnolia stellata*, which we first sent to Europe, and which is becoming quite a favourite. After that we sent *Magnolia hypoleuca* to Belgium. We hope to be able soon to send to Europe these last and various other charming things. S. B. PARSONS.

Flushing.

SUMMER PRUNING OF SHRUBS.

SHRUBBERIES, to a greater or less extent, come, in the majority of instances, under the care of the gardener. Some allow their occupants to grow uncontrolled after planting, and this may be admissible in woodland drives or in extensive pleasure grounds, but it will not suit in a limited space, or where the surroundings are of a formal character. In many cases shrubs are about the last things to be attended to in the busy time of spring and early summer. If, however, they are to be kept attractive and each subject separate from its neighbour, as should be the case in the mixed shrubbery, pruning must be systematically carried out at least annually, and in many cases much oftener, or the plants will soon get unshapely and over-grow each other. Let us separate the shrubs with which we intend to deal into those grown principally for flowering, many of which are deciduous, and those grown for their evergreen or ornamental foliage. In the first named section

some knowledge is necessary as to habit and time of flowering before cutting is commenced. We prune and thin fruit trees or bushes to keep them within bounds and to increase the quantity of fruits, which first of all have to be preceded by flowers; why not, then, apply the same system to shrubs? Probably the majority of shrubs make their flower growth the previous year; consequently to cut back late in autumn or before flowering takes place in spring simply destroys the whole of the flowers for that season. As soon as possible after flowering is over is the best time to prune all shrubs belonging to this class, thinning the branches where crowded and removing the old wood that has borne the flowers to make room for the growth of new shoots for the succeeding year. Forsythias, Deutzias, Weigelas, shrubby Spiræas, Genistas, Lilacs, Viburnums, and many others may be so treated. If allowed to grow at will, as perhaps some would recommend, their shape and limits are soon outgrown and measures much more severe have eventually to be taken. *Berberis Darwini* may be kept somewhat dwarf and yet flower very freely if planted young and the leading growths are either shortened or tied in annually, but allow these to grow up and the plants soon become unsightly at the bottom. When the plants get old and are cut down strong shoots are produced which do not flower well for some time. Evergreen shrubs now in flower are *Zenobia speciosa* and its variety *Z. s. pulverulenta*. The chief distinction belonging to them is found in the leaves. Those of the species are pale green and rather smaller than those of the variety; the latter being of a distinct glaucous colour. The flowers, which are in racemes, are white and bell-shaped and produced on the wood of the previous year; this should, therefore, be removed annually after flowering in the same way as others previously noticed. *Zenobias* grow to a height of 3 feet or 4 feet. They succeed well in peaty soil and should be planted preferably in a group by themselves.

THE GROWTHS OF RHODODENDRONS cannot be cut away without reducing the number of flowers for the next year. On the other hand, if allowed to grow thickly in clumps without cutting, the inner and under-growths soon have to succumb to the stronger ones. For clumps of these to be kept low the common *R. ponticum* should be used, as its flowers are not of so much importance as those of better kinds, and the plants soon thicken again after severe cutting, should that be necessary. Hybrid varieties are too good for this treatment; consequently, positions should be given them where they can be allowed to grow up, merely thinning a little and removing superfluous shoots with the seed-pods, should the latter be practicable, after flowering is over. Formal clumps of Rhododendrons may often be met with, but the plants do not often show themselves so well individually as when grown somewhat more naturally as single specimens. The height of the plants in clumps should be in proportion to the length and width of the clump, and they should gradually rise from the edge to the middle. Nothing looks worse than to see plants at 3 feet up projecting over those at the edge. No doubt there are many clumps somewhat similar to this in different places at the present time, and those in charge of them may be wondering what is to be done in order to restrict them. In our case many were severely cut into shape last year, and were of necessity very unsightly for some time, but they are now well furnished with foliage to the Grass edge, and this year but little cutting will be required. If annual pruning with the knife had been practised, the necessity for such severe measures would have been obviated. Other clumps in a similar state are being treated in the same way this year, and those cut a month ago are breaking out freely. The earlier they are taken in hand the better, in order that the young growths may get well ripened before winter, but where much pruning has to be done some have to wait until their turn comes. Hardy Azaleas do not grow so strongly as Rhododendrons; consequently they are not so difficult to keep within bounds. In

that case pruning is but little required, as they form themselves into fairly good shape if allowed sufficient room. The same remarks apply to *Ledums*, *Kalmias*, and *Pieris* (*Andromeda*) *floribunda*.

FLOWERING SHRUBS have not produced such a wealth of flowers and clean foliage this year as they did last; the spring frosts destroyed a great quantity of bloom before it opened, and nearly everything with us has since been infested with blight and insects of various descriptions. Most of the evergreen and ornamental-foliaged section previously mentioned may with advantage be cut over occasionally in summer, or pruned as each subject may require according to the position which it is meant to occupy. A sloping bank of the smaller-leaved sorts of common Laurels looks well when the plants are established and are cut over evenly with the knife two or three times during the summer. Dwarf clumps of these may be treated in a similar way, and the plants, except they are very old, break well when cut back hard. *Berberis Aquifolium* is also well adapted for certain positions, but, as a rule, it does not transplant successfully except when young. *Aucubas* grow somewhat flat and uneven if allowed to have their own way; remove and thin some of the growths and the plants will be greatly improved thereby. Golden Elders are extremely effective in summer planted at intervals between other shrubs or in masses. They might be used extensively where only a summer display is required, as Elders are unfortunately deciduous. They transplant very easily and may be kept quite dwarf by pinching out the points occasionally in summer. The leaves are of a bright golden colour if in an open, sunny position. Silver Elders are very liable to revert to the green form, but so far as I have seen the golden Elder has shown no signs of reversion.

IN MIXED SHRUBBERY BORDERS each plant should have sufficient room, and those in the front line should be of a dwarf-growing character, or such as can be kept dwarf without being unsightly. Pruning should all be done with the knife, or special shears for the purpose that cut in the same way as secateurs. Where these are used none of the leaves left are injured, and much of the cutting cannot be detected by outward appearances. Summer pruning of trees is chiefly limited to removing growths from side branches that take a lead, and are apt to injure the top growth. Decidars may in many cases be greatly improved by shortening some of the branches that grow in this way, but great care must be taken in doing it to keep the trees symmetrical. The same remarks apply to many other trees in large collections. J. G.

Surrey.

PTEROSTYRAX HISPIDUM.

SOME beautiful flowering sprays of this rare Japanese shrub have been sent to us by Canon Ellacombe from his garden at Bitton, where it thrives to perfection, but the flowers are not quite up to the average this season, owing to the check which they received from frost in April. The plant itself is, however, perfectly hardy and grows luxuriantly. The accompanying illustration represents a flower-raceme of this pretty shrub. The blossoms are pure white, something like those of the Snowdrop tree (*Halesia*) in shape, and the racemes hang gracefully amidst broad healthy foliage. It is to be regretted that such a valuable shrub should still be rare in gardens.

The *Pyracantha* is grown more for its berries, which are retained throughout the winter, than for its flowers, but the latter are by no means unattractive; indeed, some bushes of the variety *Lelandi* grown in rather poor soil have been this season objects of great beauty, owing to the profusion with which their blossoms have been produced. The berries of this variety, too, seem to be more ornamental than those of the common kind. The plants under notice were struck from cuttings, a circumstance which would partly account for their great floriferousness, even when small. This mode of propagation is to be pre-

ferred to seeds. Cuttings formed of the half-ripened wood, if kept close in a cold frame, soon emit roots. They may be put in at almost any season of the year, provided the young shoots are not too succulent.—T.

INDOOR GARDEN.

SPIRÆA JAPONICA.

Of flowering plants few indeed are more useful than this. We force it into bloom in January, and have a constant succession of it until the middle of July. For cutting for vase decoration we find nothing more useful especially in early spring, the flower-heads being graceful in form and of that pure white which harmonises so well with all other shades of colour. There is nothing flimsy about the blooms; they invariably open well, remain a long time in good condition, and are not easily injured by transit in a cut state. This *Spiræa* is suitable for either the greenhouse or the herbaceous border. Our early plants of it adorn both. As to its culture, no plant can be more easily grown; it is perfectly hardy, it will succeed exposed to the sun from morning till night, or it will thrive and bloom profusely without being exposed to a single ray of sunshine. Our latest plants now coming into bloom are growing along the bottom of a north wall where they are constantly in the shade, but these shade-grown plants would never force into flower early in spring. To accomplish this it is of the greatest importance that the plants be grown strongly in the early part of the season, and that they have their crowns thoroughly matured before the winter sets in. It is generally asserted that foreign crowns force more readily and are better matured than home-grown ones. Better matured they may be, but it would be impossible for them to force more satisfactorily than the home-grown plants when properly cultivated. Large plants in 10-inch and 12-inch pots are most useful for late spring and Easter decoration, but for January flowering small, well-developed crowns in 6-inch and 7-inch pots are best.

When plants of this *Spiræa* become too large, a number of them should be divided and potted into small pots early in the season, or after they have done blooming. These should have a good rich sandy soil in which to grow. Until the end of May they should be afforded the protection of a frame; after that, until the autumn they should occupy a warm, sunny position, and if the pots can be plunged, so much the better. This will keep the roots cool, which is an advantage, as they cannot bear anything like roasting or dryness at the root in summer, and one of the main points in their culture then is to keep them constantly well supplied with water. The earliest developed and best matured crowns should always be used for forcing first; weak ones or those only recently done flowering would never be satisfactory if forced in December to bloom in January. When plants have been forced year after year for a few seasons, thus impairing their constitutions to some extent, it is well to give them a rest and turn them out into the borders, where they should be allowed to go on in their own way for a year

or two before being repotted. Plants which bloomed in January last for the first time may be allowed to bloom again at the same time or thereabouts the following year, but they should not be forced more than this for some time afterwards. They will, however, bloom freely later in spring, or they may be turned out and rested in the open borders. It is no hard matter to force them into flower from the new year onwards. A temperature of 70° and plenty of moisture will do it, and a succession of flowers may be kept up by introducing a few plants into heat every two or three weeks. In April and May plants in pots will come into flower without any artificial heat if they have the protection of a glass light, then those growing in ordinary borders succeed them, and finally those

stronger than they would do under the best system of pot culture.—J. C. B.

MARKET GARDEN NOTES.

GRAPE.—The fate of the Black Hamburg as a market Grape appears to be sealed, and it is probable that in the course of a very few years not a plant of it will be found in the market gardens around London. Formerly it was grown to come in from November to January, but in some seasons it was a matter of considerable difficulty to keep it thus long, and it was only on thoroughly well cultivated Vines that it was practicable to do so in a general way. For the mid-winter supply Black

Alicante has quite supplanted it, and only those who are not aware of the merits of this Grape would ever think of growing Hamburgs for cutting in the early winter months. The Alicante appears to be of as easy culture as the Hamburg. It is of greater value and keeps longer with less trouble. Unlike Lady Downes and Gros Colmar, it does not require any great outlay for firing to ripen it, but comes along with about the same treatment that Black Hamburgs demand. A friend of mine grew the two kinds in the same house, and they did equally well with the same treatment, a fact which occasioned me some surprise, as I took it for granted that the Black Alicante required a longer season of growth. But I remember having seen these two varieties growing side by side in the open air on the Continent, and they ripened at just about the same time. But the market Grape of the future is undoubtedly Gros Colmar, the imposing appearance of which puts in the shade all other cultivated kinds of black Grapes, and the higher price which it realises more than compensates for the extra skill and expense involved in its culture. It is probable that in time this will be almost the only black Grape grown for the London markets, for in Covent Garden intrinsic worth is as nothing compared with appearance. Size and colour outweigh flavour there both in the matter of Grapes and other fruits. I am informed on good authority that the Messrs. Rochford are erecting seventeen vineries, each 100 feet long, to be filled with Gros Colmar, a fact which sufficiently shows the favour in which this Grape is now held by those who best know the requirements of the

London markets, and is a sign that Grape culture in experienced hands still gives good returns. Mr. Ladds, however, who seems determined to exceed all others in the magnitude of his operations, is, I believe, about to build, or is actually engaged in the erection of, a graperie over 700 feet in length. I do not know with what kinds it is to be planted, but undoubtedly with long keeping kinds. This, I believe, will be the largest vinery in England.

TOMATOES.—The old saying that "when one gate shuts another opens" appears to be a truism in the case of market culture, for in my recollection several important sources of revenue have closed to those engaged in growing for profit, but the loss of which has been compensated by other equally lucrative ones springing up in their place. Thus we have witnessed the decline and



Flowering spray of *Pterostyrax hispidum*.

behind the north wall finish up a seven months' supply of *Spiræa* bloom. J. MUIR.

5215.—*Eucharis amazonica* planted out.—I should advise "Enquirer" not to run the hot-water pipes through the bed of soil in which the *Eucharises* are to be planted. They would not serve any good purpose, but would dry the earth, and probably at some time destroy or injure some of the roots. If the arrangement of the pipes admit of it, the bed of soil should be just over them—not necessarily close to them, but where the warmth from them would gently pass into the compost. This would give all the requisite bottom-heat, and in well-prepared compost with judicious watering there would be no doubt as to the bulbs growing and flowering well—much

fall of Cherry forcing and Pine culture, whilst the Tomato, at an almost sudden bound, has attained such popularity and is grown in such quantities as would never have been thought possible only a very few years ago. The fact of one grower alone having made preparations for sending six hundred tons of house-grown Tomatoes into market this season is a proof that the culture of this esculent has become one of the most important of gardening industries at the present time. Whether the supply will not in time so far exceed the demand as to cause the prices obtainable to be too low to prove remunerative is another matter; at the present moment it would seem that Tomato growing under glass is a profitable affair.

PINES.—I mention these merely to observe that, in spite of what has been said to the contrary, there is no longer any chance of Pines being profitably grown for market. I should have thought that the very fact of market gardeners generally abandoning the culture of any particular fruit—such as Pines, for instance—would be convincing proof that it could not be made to pay. No market grower will relinquish the production of any one thing until circumstances drive him to do so, and your readers may rest assured that Pine culture in this country as a market industry is dead—done to death by foreign competition, a fate which possibly awaits many other things now largely grown in England. I do not know of any market gardener in the neighbourhood of London who now makes a speciality of Pine culture, with the exception of Messrs. Wilmot, and they, I believe, now do comparatively little in that way, and rely principally upon a private connection for disposing of their produce, and yet it is not so very long since I have known these growers send in twenty-five Pines into Covent Garden in a single morning.

OUTDOOR STRAWBERRIES.—From what I hear, the open-air crops are again good this year, although I should think that the yield is not likely to be so heavy as last season, owing to the continued drought. The cold nights and drying moistureless days of the latter part of May much retarded the ripening, so that fruit was exceptionally scarce during the first three weeks in June. It is curious what changes take place in market culture in a few years. A short time back one did not hear particular mention made of such a place as Southampton in connection with Strawberry culture. Now from the neighbourhood of that town come the main supplies during the earliest period of the outdoor season. As soon as the Southampton fruit comes in the price drops immediately to 1s. per pound. We always know what to expect when an advice from the salesman says, "Southampton Strawberries coming in." There are such immense plantations now in that district, that even the first gatherings amount to tons daily, and the fruit is in a general way very good. The development of Strawberry culture has given to Covent Garden a larger amount of early fruit than was the case a few years ago by the opening up of localities where it ripens a week or ten days before the main crops come in from the neighbourhood of London, from Kent, and Essex. At one time there used to be an interval between the Cornwall fruit, the late house and frame fruits, and the main crops, but this is now bridged over by favoured districts in various places, and which are continually being, as it were, discovered. Thus there is not eight miles from here a Strawberry grower who can pick fruit almost as early in the open as we can in cold frames carefully covered up at night, and this year his early contributions realised 4s. per lb., a handsome price for outdoor fruit, and which would make the fortune of any grower who had enough ground of that description. But these very warm situations are nearly always of limited extent. Where the fruit ripens thus early the ground is of peculiar configuration, being perfectly sheltered from cold, cutting winds, yet lying well up, forming a slope and open to the sun all the day through. The soil, too, being light, favours precocity. Such a combination of favourable circumstances but rarely occurs; but

there are doubtless thousands of places of a nature peculiarly favourable to the early or sure production of some kind of hardy fruit now either lying waste or of but little value to the owner. I know of land near here given over to rabbits because it would not grow corn and roots so well as it might, but which is one of the best situations for Apples and Plums I ever saw, being naturally well drained and sheltered.

J. C. B.

RECENT PLANT PORTRAITS.

DRYMONIA MARMORATA (*Botanical Magazine*, plate 6763).—A double plate of a very handsome plant, probably a native of Guiana, which flowered in the establishment of Mr. Bull in June, 1883, but all trace of its origin has been unfortunately lost. It has handsome marbled foliage with conspicuous yellow tubular flowers, much resembling those of some of Gesneriaceæ, and issuing from bright rosy bracts or calices. It seems to be a very free flowerer, and should be a desirable addition to all collections of large-growing stove plants.

HYPERICUM EMPETRIFOLIUM (*Botanical Magazine*, plate 6764).—This pretty half-hardy little St. John's Wort, which is a native of Greece, has been already figured on plate 178 of this work under the erroneous name of *H. Coris*, the true *H. Coris* being also recently figured on plate 6563. The two varieties are quite distinct in habit, though almost alike in flower.

CARAGUATA SANGUINEA (*Botanical Magazine*, plate 6765).—This handsome Bromeliad is a native of New Granada, and was first seen by its introducer, M. E. André, in May, 1876, when on one of his botanical excursions in the Western Cordilleras of the Andes of New Granada. None of the first gathering reached Europe alive, but it was successfully introduced in 1880, and has been propagated, and will shortly be distributed by M. Bruant, of Poitiers. The present portrait was drawn in November last, from a plant presented to the Kew collection by M. André.

SOLANUM JAMESI (*Botanical Magazine*, plate 6766).—A small, white-flowered, herbaceous, tuber-bearing Potato, a native of Arizona and Mexico, which may possibly be the means of improving and rendering disease-proof our cultivated species. Experiments are now being made with this and other wild sorts on both sides of the Atlantic, the results of which are looked forward to with much interest.

BEGONIA BEDDOMEI (*Botanical Magazine*, plate 6767).—This is a native of Assam, and is another addition to the already large group of Asiatic Begonias more or less nearly allied to the well-known *B. Rex*. This variety has pretty pale pink flowers, but is principally remarkable for the pellucid character of the leaf, the red under surface of which is in certain lights visible through the tissue, and the white spots on the upper surface have a beautiful silvery lustre.

CYPRIPEDIUM SPICERIANUM (*Belgique Horticole* for October, 1883).—A carefully drawn portrait of this beautiful Bornean Lady's Slipper, introduced in 1878, and now pretty well known, and to be found in most good collections.

APHELANDRA MARGARITE (*Belgique Horticole* for November, 1883).—A beautiful and distinct new species of these handsome stove plants, desirable both for its bunches of bright fiery orange flowers, and also for its exceedingly handsome dark green foliage, which is beautifully and evenly variegated with pale yellow bars, and of a bright rose colour underneath. It is of a dwarf and compact habit of growth, resembling *A. pumila* in that respect, and has been introduced by Messrs. Jacob Makoy, of Liege.

AZALEA INDICA VEEVAENIANA (*Illustration Horticole*, plate 523).—A very handsome seedling, raised by M. Joseph Verveae, with large semi-double carmine flowers distinctly blotched and margined with pure white.

ODONTOGLOSSUM NEBULOSUM VAR. GUTTATUM (*Illustration Horticole*, plate 524).—A beautiful and deeply-spotted form of the comparatively well-known *O. nebulosum*, which has been intro-

duced from Mexico by the Compagnie Continentale d'Horticulture of Ghent.

PENTACHÆTE AUREA (Regel's *Gartenflora*, plate 1153).—A small and slender-growing herbaceous plant, with hair-like foliage, and bearing on the top of each stem a pretty semi-double yellow flower of medium size and good substance.

W. E. G.

GARDEN FLORA.

PLATE 448.

A GROUP OF HEPATICAS.*

THE genus *Hepatica*, although consisting of but few really good species, is, nevertheless, extremely rich in single and double varieties, many of which are very brilliant spring flowers. In the annexed plate we have a group of single forms showing considerable diversity in the way of colour. A pure white kind, not represented in the plate, has flowers nearly an inch in diameter, with bright and very conspicuous red stamens; Barlowi, with exquisite mauve-coloured flowers, is also large and pretty distinct; *H. cœrulea* is a free flowering deep blue, single, and very handsome kind, as is also the double form of it; *H. rosea* is an extremely free flowering sort, of which there is a larger form called *grandiflora* in which the colour is more intense; *H. lilacina*, a pale lilac, is very pretty and distinct; *H. angulosa*, although, perhaps, not so free flowering as some of the others, has flowers of a very large size; indeed, they are not infrequently as large as a crown-piece. It is easily distinguished from the above by its creeping roots and large, hairy, from three to five-lobed leaves, which are again divided into smaller lobes or notches. It grows from 6 inches to 12 inches high. The flowers are sky-blue and very handsome. It grows in woods and along hillsides in Canada. *H. acutiloba* has been quoted as a variety of *H. triloba*, which it probably is, but it has distinct, acute-pointed lobes, varying from three to five, and variously coloured flowers, which are very pretty and distinct. The different varieties of *Hepatica*, though really easy of culture, are by no means always seen in good order in gardens. Their main requirements are a cool aspect, a sheltered position, and complete or partial shade. In their alpine homes they are found on the sides of rocky, wooded ravines, mostly facing north and east, protected by the depth of the valley, and rarely getting direct sunlight. They delight in cosy nooks close up to rocks or stumps—conditions that should be imitated for them in cultivation. Given these requirements, they will succeed in a variety of soils. In the Alps they grow mostly in, a rich dark loam, that has a natural annual top-dressing of decayed leaf-mould, but in gardens they also do well in light and peaty soil, the foliage acquiring great size, enduring throughout the winter and accompanying the next spring's bloom. Many beautiful varieties are in cultivation, embracing a wide range of colouring, from pure white through faintest lilac to deep purple, and from palest pink to a full rose-colour. Those from the Pyrenees are much more variable in colour than those from the Alps, but none are finer in a mass or larger in individual flower than the common blue *Hepatica* of alpine woods. In collecting plants on steep gradients it is curious to notice how all the roots grow uphill, as if the better to resist a surface rush of water, snow, or rolling stones.

* Drawn in Mr. Ware's Nursery, Tottenham.



SEASONABLE WORK.

FLOWER GARDEN.

BEDDING PLANTS.—Bedded-out plants are now beginning to grow freely, and increased diligence will be needed to keep them in neat form; peg them out to cover the ground at the earliest moment, and water liberally, but not too frequently; they will then root deeply and be uninjured by a few days' drought should circumstances prevent water being applied. *Alternantheras* and other delicate kinds would be greatly assisted by a syringing at sunset on warm evenings and a light surface mulching of Cocoa fibre or leaf-soil. Keep all bad and seeding flowers off *Violas*, *Verbenas*, *Calceolarias*, and *Petunias*; this attention, combined with a good watering once or twice a week, will suffice to keep these usually quickly exhausted plants in vigorous condition throughout the season. Carpeting plants and undergrowths require to be gone over once a week; *Sedums* and similar kinds should be pressed out with the fingers to prevent a tufty growth, while the creeping kinds should be pegged or pinched, and stronger growers, such as *Mentha* and *Veronica rupestris*, clipped.

HERBACEOUS PLANT BORDERS.—As respects gaiety, these at the present time are in marked contrast to the bedders, and deserve all the labour as to keeping them in order that can be afforded them. Without such attention it is needless to expect results at all proportionate to those had from bedding plants; hence their being so often, but unjustly, designated weedy and unsatisfactory. Fill up vacancies by planting out seedling biennials for flowering next year, such as *Sweet Williams*, *Canterbury Bells*, *Geums*, *Columbines*, *Delphiniums*, and other favourite kinds. Should the weather become dry, they will need watering about twice a week till well established. Other appropriate positions for these kinds of hardy plants are the margins of shrubberies in any part of the dressed grounds; but before planting them the shrubs should be trimmed and the ground about them freed from weeds, and the spots for the plants should be forked up, adding where convenient either well-decayed manure or fresh soil.

FLORAL DECORATIONS.

WHAT a wealth of hardy flowers we have now in full beauty! From these any who delight in artistic decorations can draw an almost endless variety. We recently filled a stand with hardy flowers alone that would almost vie with the choicest inmates of our stoves and greenhouses. It was arranged as a centre-piece for a dinner-table; it had a base somewhat over 2 feet in diameter, from which arose a single cornucopia with a slender stem. For the bottom we used white Water

Lilies (when these are to be had, no one need seek for the Amazonian Lily), in conjunction with flowers of the German Iris, chiefly in shades of blue, two or three colours of Cornflower, some spikes of London Pride, and the same of *Spiræa japonica*. These, with the common Oat Grass, Quaking Grass, and Turk's-cap Lily, were sufficient to form a pleasing arrangement. For the cornucopia we had *Spiræa* again with London Pride, Cornflower, and some Grasses. A few tender Fern fronds were certainly used, but had the Meadow Rue (*Thalictrum minus*) been at hand, leaves of it would have been used in preference to the Ferns. The blooms of the Water Lily when wanted were closed; but this obstacle can easily be got over by passing the thumb and finger up

light and pretty. The following Grasses are also quickly coming into beauty, viz., *Agrostis pulchella* and *nebulosa*, *Briza gracilis* and *maxima*, and other kinds will soon succeed these. The various forms of *Liliums* now in flower we have not included in the above, though all of these are beautiful; the perfume emitted by them is, however, somewhat powerful, and when used a few only at a time ought to be chosen. They are fine subjects for large vases in entrance halls or corridors, where the whole spike can be advantageously used to good purpose.

INDOOR PLANTS.

BALSAMS.—These quick-growing plants very soon fill their pots with roots, and where it is intended they should grow large they must have proportionately large pots, but it is of little use shifting them when the bloom buds are much advanced; in that case all that can be done is to use manure water. A diligent outlook must be kept for aphides on all such plants, without which they are likely to get infested, and their foliage being tender does not well bear Tobacco smoke. Quassia water, made by pouring boiling water on Quassia chips and letting them remain in it for a day or so, is a good preventive, its bitter properties being distasteful to most kinds of insects. Aphides rarely make their appearance on plants syringed with Quassia water once a week or so.

CHRYSANTHEMUMS.—These should now be in their blooming pots, and all that are strong should be stopped for the last time. It is a mistake to stop the shoots so often or so late, as is sometimes practised, as when that is done, and the summer happens to be a short one, the flowers set so late as to have insufficient time to get fairly formed before it is necessary to take the plants indoors, and where large flowers are required stopping interferes with their production. A few sticks should be placed to each plant in time to prevent its being broken by wind. As soon as the roots fairly enter the new soil, manure water ought to be used once or twice a



Hepatica angulosa (see p. 24).

each petal very carefully, and reflexing them till the flower, fully open, is exposed to view. Treated in this manner, Water Lilies will not again close at night, as is their usual custom. Since arranging this stand we observe that several valuable additions, all hardy, have expanded, such, for instance, as *Chelone barbata* and the blue and white forms of *Catananche cœrulea*, the latter, we think, the prettier. Besides these there are *Spiræa Aruncus* (the Goat's-beard) and *S. palmata*; also *Iris*es of many shades of colour, and than which nothing arranges better beside the blossoms of the white Water Lilies. The shrubby *Spiræa* (*S. arifolia*) is also now in bloom, and will be quickly followed by *S. Lindleyana*. Both of these are excellent while they last. An annual now in flower with us is another favourite, viz., *Gypsophila elegans*, very

week. The idea that Chrysanthemums should not have any stimulants given them until the flowers are set is a mistake, it being impossible to keep the lower leaves on them without it, even where the attention in the matter of water is such as to prevent their ever suffering through drought.

DRACENAS.—Whatever propagation is to be yet done with these it should no longer be delayed. The crowns of all the stove varieties, as well as most of the greenhouse kinds, will strike readily in water in stove heat, and the leaves attached suffer less when they are struck in this way than if the rooting process is effected in soil or sand. The crowns to be so dealt with should be taken off in the usual way, but may be left a little longer, that is, so many leaves need not be removed. They may then be put four or six together in any-

thing in the shape of small jam-pots, keeping the pots well supplied with water until the crowns are well rooted, after which they must be potted and kept close for a week or two until they have got established. This will be found a better method of dealing with the tops of these plants than that which is usually followed. The stems composed of the hard wood are best shaken out of the pots, taking off the bottom root pieces already formed and potting them singly. The stems may then have all the roots cut off as well as the leaves, and should be laid flat down on the propagating bed, covering them entirely with about half-an-inch of soil. Thus managed they will push up a crop of young shoots from the eyes that can be taken off when they have made three or four small leaves.

GREENHOUSE PLANTS.—The system of turning free-growing greenhouse plants into the open ground in summer has much to recommend it, provided the selection made for such treatment is confined to plants naturally able to bear the root disturbance inseparable from the transfer from the open ground to pots before winter, and enough attention is given through the summer in the way of preparation, so as to avoid the check otherwise calculated to result in serious injury. The plants chosen for this mode of summer management should be free rooters; amongst these are autumn-flowering Veronicas, Salvias, white and yellow Paris Daisies, Solanums, Chrysanthemums, and Callas; in all cases the soil ought to be free, open, and not over rich; the former condition is needful to admit of the plants being taken up with a thick mass of roots near home, *i.e.*, well packed together about the collar, as opposed to the long straggling fibres which plants of most kinds have a disposition to make in heavy strong soils. Nor should the material be over-rich, as if so growth will be over-luxuriant; the plants will attain too much size, which will make them less easily accommodated. To still further keep them within a reasonable size it is well to cut back the roots with a spade once or twice during the summer; this restricting operation is the more necessary in dripping seasons when, as a rule, all strong growing things are liable to get into an over-luxuriant condition. When the roots are in this way shortened it causes them to break back, and to make many more feeding fibres than they otherwise would. The work should be done with judgment. Where there is a disposition in the plants to get too large or luxuriant, the root-severing should be carried out before too much progress has been made, or the leaves will suffer, and if the soil is at all dry enough, water must be given to prevent the leaves flagging, and in all cases where root shortening is thus effected they must be cut back, so as to keep the balls within the size of the pots they are ultimately to occupy. Where Chrysanthemums are grown in this way due attention must be given to tying the shoots up before they get so long as to be in danger of breaking with the wind. The advantage of planting out in this manner is that much less attention is required.

ERICAS.—As these go out of flower, the seed-pods should be immediately picked off; inattention to this until the seeds have had time to grow has most exhausting effects on the plants, interfering much with the season's growth. The favourite yellow *E. Cavendishi* requires different management from the generality of the species, inasmuch as after flowering it will bear keeping close and warm for some weeks to further growth. This treatment is best carried out in the case of old plants that have bloomed and are not over-vigorous, and unless so used for a time, would not flower oftener than each alternate year. Plants that were potted in the spring and are now getting established in the new soil should have more water, but on no account give it oftener than the soil gets dry. See that all plants now out-of-doors have the sides of the pots protected from the full force of the sun, either by standing them near enough together to give this protection to each other, or fastening pieces of old canvas or some such material on each, and if heavy rains

occur, means must be taken to keep them from getting too wet, either by covering with loose lights or canvas, or, these failing, laying the plants down on their sides.

MYRTLES.—There are many who care for fragrant-leaved plants quite as much as flowers, and although old-fashioned, independent of their sweet-smelling foliage, the flowers of Myrtles are pretty. Myrtles strike readily from cuttings, and where the stock is deficient, it is well to put some in, choosing shoots that are about half ripe and not too strong; if these can be slipped off with a heel, they will root more easily. Put six or eight together in small pots, keeping them moist and close, but not in heat until the base of the cuttings are callused over, after which they will bear being warmer. Myrtles are naturally erect-growing plants, and to keep them bushy they should be well cut back every year, by which means they may be kept fully furnished with green foliage down to the base. When the plants have attained a moderate size they are better out-of-doors in the summer. The ordinary double-flowered old variety and the small-leaved *Jenny Reichenbach* are both good kinds; the last especially is very pretty in bouquets, and gives to arrangements of flowers of this kind a perfume which the other materials of which they are composed are not unusually deficient.

LANTANAS.—These plants, though not so much grown as they once were, can easily be made very useful in greenhouses and conservatories during the summer and autumn months at a season when there is insufficient variety. Their continuous disposition to flower causes the plants to get into an exhausted state unless they have adequate pot room to meet the free production of roots natural to them; this can to some extent be met by the regular use of manure water. Where wanted to bloom freely late in the autumn a sufficient number should now be stood out-of-doors with their pots plunged in ashes, in all cases keeping them freely syringed daily, and stopping any shoots that grow too luxuriantly.

ROSE CUTTINGS.—Tea Roses for pot culture of most varieties are best grown on their own roots, and where a considerable stock is required cuttings should be put in annually. Shoots of medium strength in a half ripened state taken off now and put five or six together in 4-inch pots in sandy soil and stood on a moist bottom in a close, cold frame, kept moist, and shaded when necessary for three weeks, will in this time get callused over at the bottom, after which, if submitted to a humid heat, they will soon root freely; whereas if placed in heat without first having time to callus, many will damp off. Young stock of the Tea varieties struck in the spring should be kept under glass all the summer, as well as the ensuing winter; in fact, it is a question if this section of the Rose family is not better kept wholly under glass. It is so much their nature to be continuously growing more or less during the greater portion of the year that they do this out-of-doors, and with a glass covering they are never quite at rest; neither does it seem that rest is necessary for them, as plants so treated go on for an indefinite time increasing in size and retaining their vigour. The great thing is to feed them well by the repeated use of manure water, and to keep them completely free from aphides, red spider, and mildew; if any of these pests are present they do injury in a very short time which it takes long to repair.

CAMPANULAS.—The drooping *C. fragilis* makes one of the prettiest basket plants for a greenhouse or window that can be grown; it is easily managed, and little subject to the attacks of insects. By placing a portion of the stock out-of-doors in the spring and keeping the rest in a greenhouse, the season of their blooming will be lengthened. This species will succeed in small pots—6-in. or 8-in. are large enough—and they will do two or three years without re-potting; but when thus treated they should have manure water in the spring from the time they begin to grow up to their season of flowering. *C. pyramidalis*

will now be coming into bloom, and should have manure water regularly until the flowers open. Young plants raised from seed sown early in the spring ought to be pricked off in the open ground in a bed of ordinary soil to which have been added some leaf-mould and sand, keeping them well watered in dry weather, for on their getting strong before autumn depends their ability to make handsome specimens next year.

FRUIT.

PINES.—The pit in which the early started Queens have been grown may now be renovated with fresh leaves or tan, and filled up with the most forward fruiterers from the second batch. Let each plant be made firm at the base by packing with a few pieces of fresh turf; secure the fruit in an upright position by tying above and below to stout sticks, and plunge lightly at first, until it is seen whether the new material will become too hot or not for the roots now coiling round the pot's inside. The greatest length of days having been reached, a high temperament, with a corresponding supply of moisture, may now be advantageously given to them, and liberal supplies of generous liquid or guano water may be used when the roots require feeding; the evaporating pans may also be replenished, and the surface of the bed syringed with the same, in order to keep up the requisite supply of atmospheric moisture. As the re-arrangement of this pit will make room in other compartments, a general turn over will bring together the next batch of starters, from which fine autumn fruit may be expected, and afford facilities for shifting strong successions still occupying small pots. See that the balls are thoroughly moistened before they are potted; use the soil in a dry, rough state, and ram it firmly to prevent water from passing through and leaving them dry in the centre. Be careful in the selection of medium-sized pots, using the largest for Rothschilds and Cayennes and the smallest for Queens, Jamaicas, and that excellent variety Lord Carington. Shade slightly from bright sun. Syringe the walls and dew the plants overhead on fine afternoons, but guard against heavy root watering until they have taken freely to the new soil.

APRICOTS are a fairly good crop, and require a deal of thinning, but unfortunately the Apricot is a badly treated tree, inasmuch as it is frequently burdened with such heavy loads of fruit that it is no uncommon thing to see them forcing each other off the branches. Where after repeated thinnings the trees are still heavily cropped, the surplus fruits should now be taken off and used for tarts; leaders should be nailed in and laterals pinched back, but not too close on south walls; the borders may then receive a little more good mulching, followed by a heavy watering, and little more will be needed until the fruit begins to ripen.

PLUMS AND CHERRIES.—If any of the Bigarreau and other late kinds of Cherries are still hanging on pot trees, they will be the better for removal to a cool, airy place where they can be effectually protected from sun, rain, and birds, and, space being limited, the very early kinds of Plums may be placed out-of-doors to ripen. The finer varieties, including the Gages, Jefferson's, Coe's Golden Drop, Coe's Late Red, Ickworth Impératrice, and others, which are so much improved by being grown and ripened under glass, may then be re-arranged for the season. If any of the second growths are starting away freely, as they often do after the stoning is complete, let them be stopped at the third or fourth joint, otherwise they will rob the fruit of food, and shade it from bright sunshine, of which these kinds cannot have too much provided they are properly supplied with air and water. Look well to the mulching, add more as it is required; feed well with good liquid, and syringe twice a day with clean soft water until the fruit begins to change for ripening. If any of the early pot Cherries from which the fruit has been gathered require potting, it is a good plan to give them a shift

before they are taken out of the house, and as the latter will now be kept like a warm orchard house, the soft humid atmosphere will favour the rapid formation of fresh roots. When new growth has set in no time must be lost in getting them removed, first to a sheltered shady place for a few days, thence to a dry, open situation where they can be plunged and mulched to save watering. As stone fruit trees of all kinds enjoy a firm, resisting, calcareous soil, the compost in which they are potted should be firmly rammed and the shift should be large enough to admit of good drainage beneath the ball and plenty of room above it for a liberal supply of water.

PEACHES AND NECTARINES.—When all the young growths actually required for forming the trees have been nailed or tied in the final thinning of the fruit will follow without delay, as it rarely happens that fairly treated trees lose many at stoning time. Where timely attention is paid to the selection of the fruit for the crop, preference should always be given to the finest on the upper sides of the shoots, and taking the whole area of the wall covered with foliage, about one Peach to every square foot will be found quite sufficient for ordinary trees to carry. From this time forward the principal work will be keeping the foliage clean and free from insects, the most troublesome of which are black fly and red spider. The first may be destroyed by the persistent use of Tobacco water, and the second makes but little headway where the borders are well mulched and the engine is vigorously applied at the close of the day. The proper balance of the trees must also be kept in view, otherwise foreright and gross shoots, while robbing the fruit, will greatly interfere with the extension of the leading branches, and as these never require stopping where there is wall space to fill, growths which will be taken out after the fruit is gathered may be shortened back to let in light and air, so essential to the proper ripening of the wood.

STRAWBERRIES.—Young plants intended for making new plantations should be taken away from the parent stools and removed to a cool shady situation as soon as the small pots are nicely filled with roots. If the ground upon which they are to be planted can be cleared of the spring crop, which generally consists of early Peas or Potatoes, lose no time in getting it well limed, manured, and broken up to a depth of 18 inches or 2 feet, add another dressing of manure, fork it in near the surface, and tread firmly. Set out the lines 2 feet 6 inches apart, see that the balls of the young plants are thoroughly wet when they are turned out, and place them 15 inches from each other in the rows. Where new heavy soil is plentiful and can be spared, give a little if only a 6-inch potful, to each plant, see that the balls are firmly embedded and covered to protect them from drought. Give a good watering to settle the soil, and mulch with a little short manure.

KITCHEN GARDEN.

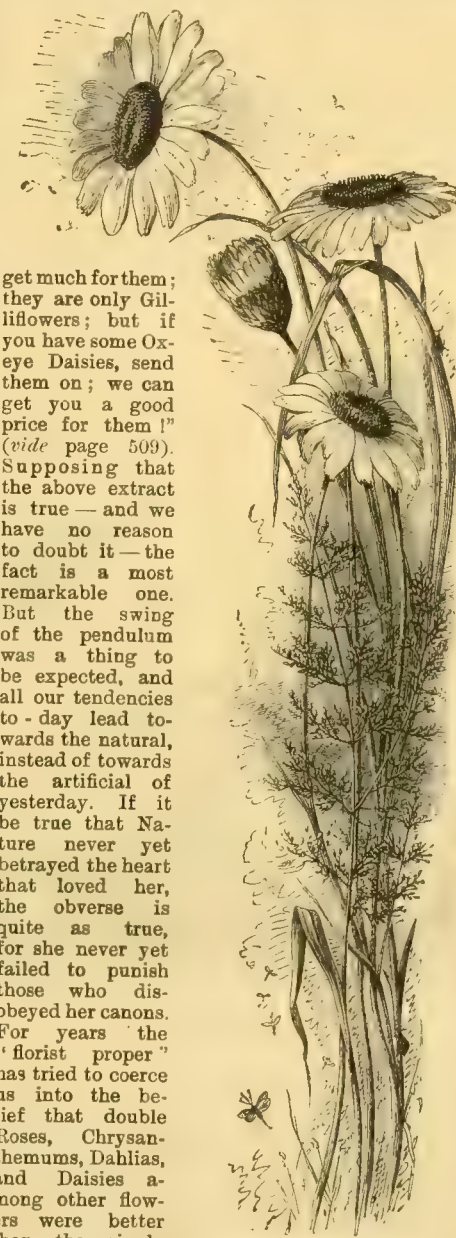
POTATOES when lifted will leave ground vacant for the earlier kinds of Broccoli, which we plant as we clear the ground. We let the Potato tubers lie for an hour after they are dug in order that they may get quite dry and be in the best condition for use. Sow at once the latest crop of Peas. We grow William I. and Unique, both good early and late varieties. We have just finished planting our stock of Celery, excepting a row or two for very late use. Should the present dry weather last, young Asparagus plantations will be benefited by being mulched with short litter and having a good soaking of manure water. Keep the beds clean by hoeing and weeding; in fact, time may now be profitably spent in using the hoe amongst all growing crops. We have now got well into July—an important month for the kitchen gardener. Eadive and Coleworts should be sown at once. That important crop, winter Lettuces and Cabbages of all varieties, must be sown this month. The land should, therefore, be got ready for them without delay. Our early Pea land is always used for seed purposes, well cultivated, but never dug at all. We put on 2 inches of burnt refuse, which

freshens the soil and sweetens it, too. Under such circumstances the young seedlings always come up strong and healthy.

FLOWER GARDEN.

OX-EYE DAISIES.

A FRIEND of mine took some white Stocks to Covent Garden market a week or two ago. "They are very good," the salesman said, "but we cannot



Ox-eye Daisies in a hedge.

get much for them; they are only Gilliflowers; but if you have some Ox-eye Daisies, send them on; we can get you a good price for them!" (vide page 509). Supposing that the above extract is true—and we have no reason to doubt it—the fact is a most remarkable one. But the swing of the pendulum was a thing to be expected, and all our tendencies to-day lead towards the natural, instead of towards the artificial of yesterday. If it be true that Nature never yet betrayed the heart that loved her, the obverse is quite as true, for she never yet failed to punish those who disobeyed her canons. For years the "florist proper" has tried to coerce us into the belief that double Roses, Chrysanthemums, Dahlias, and Daisies among other flowers were better than the single kinds. Against this dogma many besides myself have set their faces, and the result now-a-days is that we have single-flowered races of our popular garden flowers not to the exclusion of, but in addition to the double forms. The question at issue is not whether double or single flowers of any species or race are best, but whether both double and single-flowered races are not better than either grown and praised by a clique to the exclusion of the other. We are not of those who say the "florist proper" of yesterday was ever wrong in an absolute sense, but that he was too narrow and restricted in his views has of late years been most abundantly evident. After all, the world is wide enough for all tastes, and there is ample room for beauty the most varied in our

gardens of to-day. A lady told me only yesterday of the flower beauty a short London season had afforded her, and especially referred to the beauty of a few roots of the common Dandelion, which a noted artist had deliberately planted in his town garden for its early colour alike in blossom as in downy seediness. But then this painter is a cultured man, and the extreme beauty so often evident in common things was not thrown away upon him. I often think there are some amongst us who admire and purchase and cultivate the wild flowers of other countries to the neglect of those equally lovely in our own fields and woods at home, and I know that some of my friends have bitterly repented the numerous half-crowns squandered upon alpine weeds and other "new" hardy plants offered for sale during the past few years. But there is a time for all things, and for plants, as for dogs, a day of popularity is in store, and so just now the Ox-eye Daisies, which have often been in clover in a literal sense, are now loved and cherished for their own simple and cheerful beauty alone. I have just been into the fields, and every unknown meadow and hedge-bank is a fluttering mass of big white Daisies, and warm, dry Potato patches are fairly aglow with Corn Marigolds. Cotton Grass, bright as burnished silver, gives a sheen to the marshes where the red cattle are just now shoulder high among the reeds and yellow Iris flowers. It is all very well for us to smile at that wave of good taste which in some measure, no doubt, really was made a trifle ridiculous by æsthetes of the "utterly utter" type; but as we prefer honey to stinging, so let us take to ourselves what was true and good of it, leaving the vulgar imitation to its fate. And what I now have to say is, that many of our native Daisy flowers, if grown with the same care and attention given to a double Dahlia or a double Pink, will prove to be really welcome additions to even the best-kept garden. A friend of mine (whose name I will give to anyone who doubts my statement), who knows most of the best exotics and grows them better than most of us, took the trouble to select a root of the common Daisy (*Bellis perennis*), and he planted this in a deep, rich border in the garden. The result surprised him, and there were visitors who admired it, little dreaming it was a descendant of that immortal "bonnie gem" slain by a poet's ploughshare! That a representative of a hardy flower nursery failed to recognise this particular specimen as the "common Daisy" is not, perhaps, much to be wondered at, so bravely did the rosy beauty bear the honours to which she was not born. It is so with the common Ox-eye, the Corn Marigold, the blue Chicory, and some of the wild Hieraciums or Hawk-weeds. If they are well planted, and if space be given them on a sunny border, they are beautiful beyond description, and scarcely recognisable by those who only know them as uncultivated weeds. What a blue cloud the Cornflower can spread over a dry bank is now well known, since someone was inspired to send a big bunch or two of its blossoms to Covent Garden Market, where also great clusters—sheaves, I may say—of golden and white Ox-eye Daisies have long since followed them. But we have many other beautiful hardy flowers, although we do not value them quite so much as is desirable. You cannot open "Harper's New Monthly" without finding out how far ahead of us cultured America is in this matter. "Nature's Serial Story" is, indeed, a pretty one, as illustrated so daintily. After all, every blossom that blows is, or has been, a wild flower somewhere in this world, but what we especially plead for are the Ox-eye Daisies, those star-like fairies of our own dewy fields.

F. W. B.

Senecio Doronicum is very pretty in flower borders just now. It has a compact habit of growth, rarely exceeding a foot in height. The stems are many-flowered, and the individual flowers are large, dark orange, and very showy. The lower leaves are long and taper gradually to the foot-stalk, which is short; the upper ones are stem-clasping, opposite, and of a bright shining green. Even when out of flower these evergreen leaves in dense tufts look well. It likes a sunny place on the rockery. It is propagated by means of offsets produced round the base and which strike freely in a cool frame.—D. K.

EARTHENWARE RINGS FOR BULBS.

MR. H. D. PALMER has evidently hit on a most excellent plan for preserving bulbs in borders, and one that is likely to be followed by many who are fond of this class of plants, as most growers, like himself, are continually annoyed by the losses which they sustain in having their bulbs uprooted and often destroyed by careless digging of the borders. Not only are they disturbed at that time, but they are frequently injured when ripe and resting without foliage by planting other plants over them, when the trowel gets driven into the crowns, and they afterwards become choked by the roots, which in dry seasons seem to feed on the bulbs and suck out their moisture. To try and prevent any of these evils we have for years been using stout galvanised wire pins, made with a single stem to go into the ground, but having the top bent so as to form a sort of handle, to prevent their being driven into the ground. These answered fairly well, but somehow they got displaced and stuck in elsewhere, but when or how no one appears to know, although I have no doubt it is done when digging. If the rings Mr. Palmer speaks of can be made strong enough to resist ordinary rough usage, they will, I think, be of great value, as, besides protecting the bulbs by so unmistakably marking out their whereabouts, they will form walls, as it were, to raise the soil, when so desired, above the ordinary level, which is a great gain in the culture of some bulbs where the ground is of a cold or wet nature, as that within and just round the rings may be specially prepared by an admixture of peat, leaf-mould, and sand, or it may be dug out and replaced altogether with fresh, to suit the particular bulbs to be placed within the ring.

The hardest ware I have seen is that used for sanitary purposes, the pipes for which are glazed, which seems to add greatly to their strength, as it takes a very hard knock to break them. If these could be made into 6-inch lengths, and sold at about the same rate per foot as they now are, there would, I believe, when their utility and value became known to gardeners, be a great demand for them, as hardy plants of all kinds are cared for and grown more now than ever they were. Perhaps some of our enterprising potters will start the manufacture of these earthenware rings and advertise them, or the makers of the strong glazed pipes referred to may be induced to take the matter up, and as no sockets are required, but just 6-inch plain pieces of one size throughout, they would be easy to form and get into and out of the kiln.—S. D.

— I have read Mr. Palmer's suggestions with regard to these rings carefully, and I must say I fail to see their utility, while they would cost a lot of money in a large place. I recognise the need of marking the spot where certain plants are growing, but how are the earthenware rings going to help me to find them when the rings are to be buried in the soil and I am to depend on the "ring of the spade" against the earthenware to

learn where the rings are, seeing that I never put a spade or a fork in the soil where my plants and especially my bulbs are? The indications of the whereabouts of any plant should be above ground and not below it, and if we only had a good permanent label of some kind it would answer the purpose perfectly. How Mr. Palmer's bulb and other border plant clumps get dug in half and the bulbs scattered over the border is more than I can tell, unless it is done in the digging, and I feel sure had he never adopted such a barbarous practice as slicing his border plants up by the spade in such an indiscriminate manner, the rings would never have occurred to him. Neither Daffodils, nor Crocuses, nor Hyacinths, nor any of the bulbs he mentions have the habit of scattering themselves in the way he states, unless dug up and divided in utter carelessness, and roots that never die below the surface will always show their whereabouts themselves. Gardeners have quite enough of work and bother without putting girdles round all their hardy plants, and afterwards adopting the condemned practice of digging the border with a spade to find where the girdles are. Let me advise Mr. Palmer to

which they are quite unknown, and as they require no care, there is no excuse for their omission. I need not speak of the varieties of *L. pyrenaicum*, which at the best are not very good, but will pass on to *L. colchicum*, which is most commonly sold under the name of *L. Szovitzianum*. This is a lover of stiff soil, and does decidedly better in the open air than under cover; thus its cultivation is the easiest possible. It does not increase fast by multiplication of root, but produces seed in abundance, and seedlings begin to flower at about four years old. It likes the shelter of surrounding herbaceous plants, and the stalk can, with this help, support itself without any tying. I give no specially prepared soil to this Lily, but dig in some coarse sand with each bulb, and by adding two or three handfuls of bone-dust, I find that the vigour of growth, not only of this, but of most Lilies, is greatly increased. The stalks grow about 6 feet high, and produce in the best specimens from twelve to twenty-five flowers. The colour varies from rich golden yellow to pale straw colour, and the anthers and spotting of the leaves vary greatly in the same batch of seedlings. *L. Hansonii* does equally well in the open

bed and under cover. This year it has flowered equally well in both, the stalks having produced from twelve to twenty flowers each; but I have more than once had the flowers in the unprotected ground injured by late frosts about the time the buds were first visible. It seems to like the mixture of peat and sandy loam generally recommended for Lilies. *L. Humboldtii* is just coming into flower, whilst *L. Washingtonianum* is nearly over. I regret to say that neither of these can be said to succeed well here without protection from wet in winter. *L. Humboldtii*, it is true, in some cases grows vigorously and makes fine heads



Ox-eye Daisies in Grass.

cease digging his bulb borders, which no considerate plantsman would think of doing, and to hoe and rake their surface the last thing in autumn when he clears away the dead stems, and they will show themselves where they are in due time, and will keep to the same spot. Creeping subjects like the Lily of the Valley will not be confined by the rings, but will push over the tops of them and under them just as if they were not there.—S. W.

LILIES AT EDGE HALL.

THE cultivation of Lilies in the open ground of the mixed flower border is a subject in which all gardeners are interested, and during the last three years I have compared the results of planting in a bed covered with removable lights and in beds of unprotected soil; and though our experience progresses rather slowly, we are learning something every year. In the first place, we are learning that no Lilies make a better return for the room they take than those hybrids or varieties of *L. croceum*, known as *L. unbellatum*, the effect of which in the mixed border during June and July is grand. These ought to be mentioned, because I have found gardens, otherwise well stocked, in

out-of-doors, but it seldom completes its flowering to the end of the spike. Indeed, in the case of both of these Lilies, whether grown in or out-of-doors, I have found it an advantage, when the number of buds on a stalk exceeds thirty, to break off the upper part of the stalk as soon as it can safely be done. If half the buds are removed in this way, the flowering of the remainder becomes much finer. I have had several heads this year on which I counted upwards of fifty buds, but the number has been reduced to about twenty-five. Both these Lilies seem to like something stronger than pure peat to grow in, and should have half the soil sandy loam. The many-flowered variety of *L. Washingtonianum* known as *rubescens* is by far the best. The other with larger flowers which continue nearly white seldom requires disbudding. The Martagons proper show a decided preference for strong soil and like a damp shady place. All the kinds, including the dark dalmaticum, grow very vigorously here, having an ugly habit of producing fasciated stems, which is difficult to prevent. I find *L. canadense* a troublesome Lily; it dies out in my peat beds. The variety *L. c. rubrum*, the neatest of all, has flowered now for three seasons in my well-drained mixed beds, but has made

no increase. I may say nearly the same of *L. superbum*. It continues to come up year after year thinly, but in an uncertain, capricious sort of way, as if it did not feel at home. I do not consider it a first-class Lily, the colour being dull and the heads liable to be destroyed by spot when in full flower. *L. pomponium* of the Maritime Alps is a good Lily in a well-drained alpine bed. It succeeds better in loamy soil than in peat. I had this year a fine head with seventeen flowers where the bulbs have been established for three years, but in pure peat beds the bulb degenerates and dies out. *L. chalcidonicum* is a very good Lily where it does well. It seems to like a sheltered, damp situation and a moist soil, but not too strong. I find that here the tendency of this Lily, as of several others, is to lose its leaves before, or at least, too soon after flowering, showing that the conditions of growth are somehow unsatisfactory. The point of the shoot seems sensitive of late frost and suffers from it, so that the flowering is injured. *L. pardalinum* and its variety *californicum* are the specialities of the peat beds here. The plants of the former grow 7 feet or 8 feet high, increase rapidly, and produce on each head from five to fifteen flowers. *L. californicum* seldom exceeds 5 feet, or ten flowers on a head, but the flowers are larger and of a much richer colour. I think this Lily well suited for general cultivation in the mixed border, but at its best it is inferior to *L. tigrinum*, which no coaxing will make grow in this soil. I have nothing new to say about *L. auratum*. English conditions rarely suit it well, and the flowers in many gardens only open to be destroyed by unseasonable rains. I find, however, that in a covered frame it is just as unsatisfactory as in the open border, and if I had my choice between the orange *L. umbellatum* and *L. auratum*, and might not grow both of them, I would certainly prefer the former for garden decoration. Nothing makes one more dissatisfied with the English climate than the behaviour of *L. auratum*. *L. giganteum* ought not to be omitted. Where the soil is light and deep its cultivation ought to be easy. I grow it in peat beds in a sheltered place, and have now two fine specimens in flower. I find no special attention required for it. *L. testaceum* is not an effective Lily, and is unusually poor this time, owing to the cold winds in spring and the drought. I cannot boast of any new discovery by which *L. candidum* can be made to do well where the natural conditions are unsuitable. It does best here grown amongst the Gooseberry bushes. The varieties of *L. elegans* will not do on a cold subsoil. *L. Parryi* does well in the covered bed, but has hardly been tried out of doors. *L. Leichtlini* is a failure in both places. *L. longiflorum* and *L. Browni* flower well only under glass, and as for *L. Krameri*, it seems about the most unsatisfactory of all, for out of many dozens of imported bulbs I have bought hardly one has been induced to flower here under any conditions.

C. WOLLEY DOD.

Edge Hall, Malpas.

LATHYRUS DRUMMONDI.

I HAVE at the present moment a plant of this Everlasting Pea, planted out in 1882, growing against a west wall, that being well established has put forth three very strong leading shoots; these made side growths almost as strong, and these in turn have put forth abundance of lateral growths, and flower-stems are thrown out in the greatest plenty. Only let anyone get it established in suitable soil, and they will have no cause to complain of its scarcity of flower. And it is marvellous to what great lengths its shoots will travel; my plant already covers a space of from 12 to 15 superficial feet, and it has by no means done growing. It is trained to some galvanised wire netting; the leading shoots are tied in position, and they instantly put forth laterals. The consequence is a good succession of flower is provided, more so than in the case of *L. grandiflorus* and *L. latifolius*. My plant is against a wall fully exposed to the sun, which is too hot for it; a preferable one would be a moist and shady spot, where the sun would shine upon it some portion

of the day, either in the morning or after part, but not all through the day. It wants a good deep soil to grow in. It forms long, fleshy roots, which penetrate deeply into the soil, and nothing seems to suit it better than a good, deep, sandy loam with some manure and leaf-mould mixed with it at the time of planting. It must have something to attach itself to in the same way as the Clematis, and then be allowed freely to go ahead. How its peduncles are crowded with rich salmon-carmine flowers was seen from the cut specimens shown by me at the meeting of the Royal Horticultural Society on the 8th inst. Under a hot sun the blossoms burn somewhat—a peculiarity not confined alone to this species of perennial Lathyrus. In dull weather it maintains its character much better. I must support the reputation of this fine species. For a few years past I have endeavoured to induce some of the flower-loving public to take it up, but without much success.

Ealing, W.

R. DEAN.

IRISES AND PÆONIES.

FOUR boxes of these charming flowers, containing about three dozen bunches of each, arrived here the other day from Haarlem. Next to seeing these plants growing in masses, this mode of presenting them in bunches is perhaps the most effective. I have long been aware of the attention bestowed on Pæonies by the bulb growers of the Low Countries, but three dozen superb varieties in bunches of threes gives one a more vivid idea of the perfection to which the Pæony has been brought. The size, form, and colour of several of these is really magnificent, while the perfume is also soft and sweet in not a few of them. The Pæony is one of our finest subjects for the old-fashioned herbaceous border, and has improved so much of late years as to deserve a bed, border, or even garden all to itself. Such a garden might have central beds, or a protecting boundary line, or hedge of tree Pæonies, and beds of different coloured forms and varieties. The pure white or very slightly tinted ones, and the deep crimsons and rich glossy purples are among the most striking, though the infinite variety of pink, rose, and peach-coloured Pæonies are also extremely beautiful.

As to the Irises, there are no hardy and but few tender flowers to match their extreme beauty and rich variety of colour, form, and fragrance. Almost their only rivals in these respects are the more choice Orchids, and they can hardly be said to exceed the Irises in richness, variety, and beauty. The whites and yellows are among the most striking. The following descriptions are by no means exhaustive. They are mere suggestions as to prevailing colours. Some of the flowers would take half a page to exhaust their many-coloured features of interest, and only those who have ever attempted it can know how utterly impossible it is to describe the Iris. Paul Grévy is white and yellow; Czar Peter, purple and yellow; Mr. George, brown and orange; L'Unique, pale purple; Gezers, yellow and purple; D. T. Fish, blue, striped with orange; Solfaterre, rich soft yellow; L'Admiration, purple with yellow centre; British Queen, exquisitely delicate, pure white tipped with yellow; Baron Ulm, rich blue shaded crimson; Vulga, dark purple; Aristemas, purple and yellow; Earl of Leicester, rich yellow and orange; Bazaine, purple with yellow centre; Diano, soft yellow; Asdrubal, purple and yellow; Dorotti, purple; Orange Queen, very choice; La Citronnière, rich citron; Incomparabilis, blue; J. G. Veitch very beautiful; Renaissance, rich purple and yellow; La Joyeuse, orange and purple; La Dame Blanche, white; La Hautésse, light coloured; Desdemona, rich purple; Fénélon, delicate blue; Prince of Asturias, rich blue and yellow; Ma Chère, delicate yellow; Venus, dark purple; Ornement, brown and yellow; Comte Zichy, bluish grey; France, rich purple and orange; Medley, very delicate blush and white; Formosa, blue; Minerva, very light and delicate.

In striking contrast to the infinite variety of tint and marking and the varied forms of the

Irises are the massive substance and the enormous size of the Pæonies. Not, however, that they are by any means all of one size or form, but quite the reverse. Not a few are selfs; some coloured; others are splashed, mixed, and flaked in the most peculiar and striking way; some have guard petals of complementary or contrasting colours, and in others the central and other petals are riven into shreds and fragments, hardly two flowers being alike either in form, size, or colour. Comte de Nanteuil is a rosy salmon, reflexed; M. Rousselon, large, rosy lilac, with tuft of carmine in centre; Washington, dark violet outer petals, with clear salmon centre; Artemise, soft rose, very large, shaded flower; Triomphe de l'Exposition de Lille, bright flesh, imbricated; Mdme. Chaumy, very fine, soft rose, with clear edges; Paul Verdier, bright carmine-rose, very fine; Mdme. Lemoine, white, slightly suffused with pink; Carnea elegans, very delicate; Princesse Mathilde, soft pink, shaded; Ne Plus Ultra, deep pink; Eugénie Verdier, delicate pink; Victor Lemoine, dark crimson; Chinensis purpurea, very deep crimson; Lady Anna, deep and pale pink; Henry Duvay, crimson; Mdme. Furtado, deep rose colour; Josephine Parmentier, deep pink; Abèle de Royat, deep rose; Zoe Calot, light delicate pink; Mdme. Harroquez, crimson variegated; Purpurea superba, brilliant crimson; Comte de Gomer, cupped, purple; Papaveriflora, pure white, with a few flakes of bright pink; Jules Calot, large, light, mottled red; Mathilde, delicate peach; Fulgida, very dark red; Rose d'Amour, very delicate pink; Vicomte de Forceville, light red; L'Avenir, rose; Queen Perfection, white and light yellow; Louis Parmentier, deep pink; Pulcherrima, tinted white and pink; Bois Duval, rich deep crimson; George Cuvier, very deep pink; Mons. Bouchardet, deep pink, variegated; Comtesse de Brissou, pale variegated pink.

D. T. FISH.

INDIAN PINKS.

THE bright tints of these and the great ease with which they may be grown recommend them to all who have a garden to embellish through the summer and autumn, for if desired we may have them in bloom from early summer onwards; it is simply a matter of sowing at the right time. If sown in May in the open ground they will flower well in autumn, and will be amongst those flowers which best withstand the washing rains that often occur at that season. The following year they will form grand patches, and will make an excellent show at an early period, coming into bloom long ere bedding plants can prove effective. But these Indian Pinks may be classed amongst bedders if so desired, as if raised in warmth in March, hardened off, and planted out in May, they will make a brave show through July and August. Those whose needs in the matter of

SUMMER BEDDING PLANTS exceed their convenience for wintering them would do well to bear Indian Pinks in mind, as all that is needful in their case is a slight hotbed to raise them on, and a cool frame to prick them out in afterwards. They should never be potted, but be pricked out 2 inches or 3 inches apart in boxes or pans. If put into pots they are, being strong rooted, apt to fill them with a mass of fibres, and when planted out the ball becomes dry, so that the plants are slow in starting away and seldom make the free rapid growth that they should do. They quickly throw up flower-stems, but the first of these should be picked off, as this induces the quick production of side stems, and until the plants gain strength and get a good grasp of the soil, they cannot well yield good blooms. Sometimes green fly attacks them, and when such is the case dip them in a solution of soft soap or in some insecticide before planting, for it is difficult to eradicate this pest when once the plants are in the open ground, the difficulty being in the case of low-growing spreading plants to get to the undersides of the leaves. Indian Pinks are not particular as to soil; they thrive well in anything between clay and pure sand, and even in the latter they may be made to

do well if well enriched previous to planting, and mulched afterwards with some rotten manure. But a sunny situation is indispensable; they love warmth and light more than the generality of flowering plants, and they suffer but little in exposed, wind-swept places where tender plants would be almost sure to fail.

FOR AUTUMN FLOWERING seed should be sown under a handlight late in March, sowing thinly, so that the young plants have good breathing room until it is time to plant them out. As soon as they are fairly up remove the protector on all favourable occasions, and they will develop into fine sturdy, bushy little specimens by the middle of May. Plant 6 inches apart if a bed is to be filled with them, or put them three in a group in the border, placing them at the above distances and you will get a blaze of bloom just at a time when the inclemency of autumn has made its mark on flowering plants generally. It is indeed at that time that Indian Pinks show their true value, for the cold nights, pelting showers, and misty days of our autumn months are bravely withstood by these gay and charming flowers, which is more than can be said of so many things used for the embellishment of our gardens through the summer months. There remains yet one and a most simple method of raising Indian Pinks which will suggest itself to many, but which I ought to mention. This consists in sowing in the open border at the same time and in the same manner as practised for hardy annuals. In light soils the seed may be sown the last week in March, and the plants from this sowing will bloom fairly in autumn, but the reward therefrom is reaped the following year in handsome specimens a foot or more across, the energies of the plants not having free play the first season, and so much of youthful vigour being retained by them, they thus take a higher development than in any other way. J. C. B.

NATURAL COMBINATIONS.

ACCIDENT often teaches us useful lessons in plant grouping as well as in other things, a remark with the truth of which I was forcibly struck the other day when looking at the following: The first combination which met my view was that of an Ayrshire Rose on a pole, from which it festooned in all directions; near the base a self-sown seedling *Spiraea callosa* had grown up nearly 6 feet high, and its red-tinted young shoots just peeped through the masses of snowy flowers, and very pretty the combination looked. The next was a big bush of a red-coloured Scotch Rose; into this *Bambusa aurea striata* had crept and taken full possession, sending out in all directions beautifully coloured yellow and green foliage on slender stems 2 feet to 4 feet high. My third illustration is the following: By the side of a little pool, and about a foot above it, I saw a dense 4-foot bush of *Acer polymorphum atropurpureum* completely set in a mass of *Equisetum sylvaticum*; the latter had been originally planted close to the water, but, not liking its quarters, it went up to the ledge on which the *Acer* stands and took possession of it with the most charming result. Other combinations consisted of a mass of *Erica vulgaris*, through which red *Helianthemums* were creeping, and in the centre grew a fine plant of the Lady Fern. *Lomaria alpina* and *Campanula pumila alba* were originally planted at no great distance from each other, and both by the side of a rocky stream; the former has crept away in all directions many feet round and amongst the stones, and the *Campanula* has crept in amongst it, the dark bronzy fronds of the Fern with the snowy bells of the latter producing a most interesting effect. A bush of *Spiraea opulifolia lutea*, 6 feet high and 9 feet wide, has been taken full possession of by *Lathyrus rotundifolius*, the purple flowers of which completely wreath it, and with good effect. A wide mass of Oriental Poppies, with their gorgeous scarlet flowers, has been invaded by three or four white Foxgloves, and the result may be easily imagined. A fine clump of *Iris versicolor* has been surrounded by the common variegated Reed, and the pretty blue flowers of the former

amongst the white striped foliage of the latter have a very pretty appearance. A collection of Heaths was planted originally on a rocky knoll, with a plant of the blue Gromwell in front. The centre plant of the Heath group is *Erica vulgaris tomentosa*; it is fully 2 feet high and as wide. The plants composing the group all touch each other, and the Gromwell has crept about along the front, back through the Heaths, and up through the centre plant, and now it forms a deep blue setting to the whole, with little bits of blue appearing all over the surface of the Heaths, and very lovely this combination is. A blue Pansy has crept up through a golden *Tuja*, and shows itself about 2 feet from the ground in a curious and pretty way. A bit of *Tropæolum speciosum* has run up an Ivy-covered wall, and has shot out from it 7 feet from the ground—a dense crimson patch in a setting of the deepest green. Finally, an Ayrshire Rose, originally planted at the top of a Grassy slope, has crept down the slope and up the Hollies, Laurels, &c., associated with it, and now forms a perfect avalanche of snowy flowers fully 30 feet deep and wide. T. SMITH.

Newry.

DOUBLE DAFFODILS SEEDING.

IN reply to "J. C. B." (p. 509), I may say that perfectly double Narcissi can never bear perfect seeds, for the simple reason that both style and stamens are included in the doubling process. It is just possible, however, in a semi-double flower that the style may not be included in the process of doubling, and then if it be fertilised with pollen from single flowers, of course seeds may be produced, but all I say is that I never saw them. It would have been better if "J. C. B." had waited until his one "pod" of seed had ripened, and he had seen his chickens hatched ere he wrote to us of the possible brood. For instance, after he tells us (p. 509) that "one bulb carries a fine large pod of seed," he directly adds, "I cannot of course assert that good seed will be obtained." In a word, he has seen a cash-box, and so he assumes that it contains current coin, which either may or may not be good. Again, "J. C. B." speaks of *N. Telamonius* as if it were a double Daffodil. *N. Telamonius* is a single kind wild on the banks of the Arno River, near Florence, and which may bear perfect seed. The common double Daffodil of gardens (Van Sion of the Dutch) is *N. Telamonius fl.-pl.* I presume "J. C. B." means to refer to the double form throughout his remarks, and not to single *N. Telamonius*. If this is so, what I say at the beginning of these remarks holds good. A semi-double Narcissus may possibly seed; a perfectly double one can never do so; and as yet we have no proof of doubles in any degree having yielded good seeds. F. W. B.

DIANTHUS HISPANICUS AND D. ATKINSONI.

THESE two splendid mule Pinks are now in full flower here. If either can prove a thorough-bred pedigree, I will apologise for calling them mules. *D. Atkinsoni* is the taller and more brilliant in colour of the two, having abundance of flowers of a most vivid crimson, twice the size of those of *D. barbatus*, which it resembles in habit. Many of the readers of THE GARDEN can probably tell its history. I believe that Mr. Nelson, in whose garden at Aldborough it was kept till his death, had it from the raiser. I had it from the garden at Munstead, to which it came from Captain Nelson. *D. hispanicus* was given to me by Mr. G. F. Wilson, who now asks for its history, which I have been trying to investigate. In Pritzels "Index Iconum," ed. 1855, I find two figures of the plant mentioned, one in Asso's "Synopsis of the Plants of Aragon," published at Marseilles in 1779; the other in Willkom's "Plants of Spain," published at Leipsic in 1852. The titles of these books might favour the idea that the plant is native in Spain, but I regret that neither book is within my reach. On the other hand, I have searched several full catalogues of the genus *Dianthus* without being able to find this species mentioned. Neither Loudon in his

"Encyclopædia," nor Don, who described 125 species of *Dianthus*, includes this. The latter mentions a variety *hispanicus* of *D. pungenis*, but the description shows it to be a different plant from this. In Sweet's "Flower Garden" I find two varieties of Pink figured which bear some resemblance to this. One is *D. latifolius* (vol. i., tab. 2), which in the colour and the size of the flowers comes near *hispanicus*; the other is *D. aggregatus* (series 2, vol. 2, tab. 166); both of these are treated as either varieties or hybrids of *D. barbatus*. Our *D. hispanicus* is about a foot high, the stalk is very dark, as in the dark-flowered forms of *D. barbatus*. The flowers are very large and very deep crimson. Both these Pinks are difficult to increase, as the plants are nearly all flower-stalk and make few shoots. I have not yet found ripe seed on either of them. It is probable, therefore, that they will continue to be scarce. C. WOLLEY DOD.

Edge Hall, Malpas.

Indian Corn.—Although this may not ripen well or even form cobs in this country, it will grow luxuriantly in any part of it, and its great Reed-like, graceful growths form the most effective of all greeneries for large vase decoration. A handful or two of this Corn sown in a good part of the garden will soon produce growths many feet high, and to large beds or borders in which vegetation of elegant growth exists this may be added with advantage.—J. MUIR.

Christmas Roses not seeding.—Don't less want of fertilisation is often the cause of Christmas Roses not seeding, but I can scarcely think that, as a correspondent suggests, that has been so in my case. For several years I have set the blooms, but the results are invariably the same, the pods swell up and the seeds form, attaining almost full size, and then just when they ought to mature the whole head of seed shrivels up. I have thought the cause might be a deficiency of lime in the soil, for Box edging does not grow very vigorously, whilst *Rhododendrons* flourish almost as well as in peat.—J. C. B.

Hollyhock disease.—In my mind this disease has always hitherto been associated with a poor dry soil, but this season's experience proves the contrary. Fourteen years and more ago we used to have Hollyhocks towering over the tops of walls 14 feet high, but owing to the disease of late years we have not been able to grow them at all. This season, however, notwithstanding the long drought which we have had, we have some plants growing in a very poor soil thriving vigorously and showing very little disease on the leaves; how is this to be accounted for?—J. C. C.

Nelson's Russian Anemones.—Dr. Marsh, Egford, Frome, a friend of the late Mr Nelson, of Aldborough, grows this class of Anemone extensively for winter flowering, and very valuable and beautiful they prove to be. They can be raised readily from seed, which should be sown directly it is ripe, and if the seedlings are pricked out early, many of them will flower the following winter. I saw Dr. Marsh's Anemones several times last winter, and was much impressed with their beauty both in the open ground and in a cut state. The older plants produce much the strongest blooms, which are semi-double, and the colours varied and rich. Their requirements are of the simplest description, as the seed germinates in a cold frame or in the open ground, and the plants appear to thrive anywhere.—I.

Dwarf white Pink.—This is one of the sweetest and most pleasing of Pinks throughout May and June. Its flowers are as white as driven snow, and they are produced in countless profusion. Small plants of it are useful and attractive, but large ones are much more so, and the best of all ways of growing it and enjoying it is to allow it to grow year after year without being disturbed until each plant has become a huge mass a number of feet, even yards, in diameter; then the grower will be in possession of a sweet old-fashioned flowering plant worthy of the name. This Pink,

besides being suitable for massing near the margins of herbaceous borders, also succeeds admirably on rockwork or on the summit of a big stone or root. When cut, its flowers look poor if mixed sparingly with others, but by themselves a large handful makes a beautiful posy.—J. MUIR.

Autumn flowers in June.—The month of June which has just closed has been in this district unusually warm, and with the exception of the first few days remarkably dry. From the 8th to the 27th but 0.30 inch of rain fell, and the mean maximum temperature in the shade was over 70°, the mean minimum nearly 50°. The warm dry weather has had the effect of driving single Dahlias and other August flowers into premature bloom. Several varieties are in blossom here now and in other neighbouring gardens; also Clematis rubella on an arch, which does not usually flower till August. With the exception of the hay, field crops have suffered considerably from the drought, the straw being very short, and Potatoes having made but little growth. The rain, however, of Saturday night and Sunday has been most welcome.—G. P., *Monkstown, Co. Dublin.*

Carnation Grenadin.—When better known, this must inevitably become a very popular border plant. There are several beds planted with it in the Messrs. Garaway's Durdam Down Nursery, near Bristol, and for brilliancy of colouring and utility I consider that this Carnation far excels anything belonging to its class for the open ground. The whole of the plants are necessarily raised from seed, as owing to their remarkable floriferousness no cuttings can be had. As a consequence, they vary rather in habit as well as in flower—some being double, others single—but all are of a brilliant scarlet colour and equally pleasing. Messrs. Garaway raise their seedlings of it early in spring, and at the present time have a great number of strong, stocky plants already well established in the open ground. All seedling border Carnations are apt to flower so very abundantly as to prevent the formation of growth for producing a display of bloom the following season; hence the necessity for making annual sowings.—W. I. M.

How to sow Daffodil seed.—In September select a deep broad Fern pan, and in that place charcoal drainage, over which place some chopped Moss from an old wood. Press it well down. One inch of Moss will be ample. On this place leaf-soil and sand shaken into the Moss, and in this composition sow the Daffodil seeds, and after a day or two give a slight sprinkle of water from a heavy rose. The seeds thus bedded in natural Moss and soil should be placed in a cool position (a cold frame) until spring, when they will appear. As they grow keep constantly putting in light rich soil and leaf-mould until the whole pan is full to the rim of foliage. In this position the young bulbets may remain for two years, after which they can be shaken out and planted in an easterly aspect to catch the morning sun; shade for a couple or more days, when you may look for your reward. This method is the result of practical experience, assisted by that very old book, "*Hale's Eden*."—WILLIAM BAYLOR HARTLAND, *Cork.*

Seeding of double Daffodils.—Allow me to state, in reply to Mr. Barr (p. 3), that I have gathered the pod of seed of the large double Daffodil, and there were eighteen seeds in it, to all appearance the perfection of development, and I should be much obliged if Mr. Barr could inform me as to the best time to sow them, as I am anxious to succeed with them, the more especially as the seeding of *Telamonius* seems to be uncommon. Strange to say, although I have never before seen a pod of seed on the old double Daffodil, I have found another small one containing six seeds, and I can only surmise that the flower must have been accidentally fertilised by *obvallaris*, which was growing near it. I have no knowledge of double Daffodils having been raised from seed, and this was the principal object in fertilising *Telamonius plenus*, and to ascertain whether the progeny would come double. Moreover, I thought that I might by chance get a double *obvallaris*, which if it united to the precocity of the latter the

general features of *Telamonius* would be a gain. What I wish to know is whether I ought to sow at once or not.—J. C. B.

Three hybrid alpine Pinks.—*Dianthus alpinus* × *D. Heddwigi*, raised by Mr. Anderson-Henry, is certainly one of the finest alpine Pinks in cultivation, but its free-flowering habit makes its propagation very difficult. The blossoms are bright crimson, nearly 1½ inches across, on flower-stems about 3 inches high. It is now in blossom at the Edinburgh Botanic Gardens, as are also two other hybrids raised by Mr. Lindsay, *Dianthus alpinus* × *deltoides*, bright rose, very free-flowering, not quite 1 inch across, with slight traces of the markings which are so well defined in the petals of *D. deltoides*. These markings are, however, sometimes to be seen more or less distinctly even in the typical *D. alpinus*. The third hybrid, *D. alpinus* × *D. barbatus* (lately described by "Veronica") has not the dwarf habit of the former kinds, being sometimes 1 foot high. It is therefore as well suited to the mixed flower bed as to the rock garden. It flowers freely, and the curious mixture of pure white, pale pink, and bright rose-coloured blossoms varying according to their age is very effective.—C. M. OWEN.

Daffodil reversion.—Probably some may think we have heard enough about Daffodils for a season, but seeing that there is a committee appointed to receive information concerning them, it becomes everyone who has observed reversion to make them known. I, for one, shall not be surprised if it should turn out that the seasons have more to do with reversion than the soil. Of the double poeticus one with me became single, and the flower different from poeticus recurvus. That this was a genuine change from double to single I have no doubt. This bulb is carefully marked. I also had a flower of poeticus recurvus that became double, but I regret to say the bulb in that case is not marked. The next thing I have to mention is perhaps more interesting, viz., that of a double kind seeding. The variety is *albo-aureus* (silver and gold); the formation of the flower is similar to that of *capax*, but the colour is different. The pod was seen by one of our leading growers when partly developed, and the ripe seed was gathered in the presence of three well-known amateur florists. I may mention that the formation of the pod was quite different from that of the seed-pod of any single variety which I have seen. This bulb is also carefully marked. I had also a poeticus plenus that formed a seed-pod, but the seed did not come to maturity. Many singles, however, do the same.—J. WALKER, *Whitton.*

Humea elegans.—This is a useful plant in many ways; it is equally well adapted for the greenhouse, conservatory, and for the summer flower garden. Its strong, upright stem attains a height of 6 feet, and even 8 feet, and throws out quantities of graceful drooping sprays, rivaling in beauty our most ornamental Grasses. Single plants of it are often used as a central figure in a circular bed, and right well they answer for that purpose, but it would be doing this plant a great injustice to confine it to such positions. There are various ways of propagating this *Humea*. One of them, and a good one, is to raise the young plants from seed. This may be sown now, or almost at any time in spring or summer. Young plants of this season's production will not come to perfection this year, but will grow on without flowering until next spring. The seed is very small, and in many cases much of it does not germinate freely, but a little extra attention will always insure some plants, and a great heat is not required to grow them in at first; on the contrary, they will succeed from the beginning in a greenhouse temperature. They delight in a sandy soil, and from the first should be grown in a mixture of this kind. Plants 1 foot high or so may be grown in a 3-inch pot, but these will not be of much decorative value; when, however, they come to be potted in 8-inch, 10-inch, and 12-inch pots, they will be of the greatest use. When growing in such pots in the greenhouse in spring, they need

not be turned out of the pots if taken into the flower garden in summer; on the contrary, they should be plunged in the pots and then they can be conveniently lifted and taken into the greenhouse for decorative purposes again in the winter. Those who possess one or two large plants of this *Humea* now should take some of the side shoots from them at once. Make cuttings of them, pot them singly in 2½-inch pots, and plunge them in a gentle bottom heat; these young plants will be found most useful from early next spring onwards.—CAMBRIAN.

Conandron ramondiioides.—One of the most interesting and beautiful little plants that have come under my notice lately is this *Conandron*. It was introduced to this country from Japan, and may, with a little extra care in getting it fairly established, prove hardy enough to stand our average winters. It is nearly related to the *Ramondia*, but unlike that or the *Haberlea rhodopensis*, to which it is also related, it is deciduous in winter, the leaves dying off in autumn, and leaving a tuft or crown of brown silky hairs, which keep the young undeveloped leaves from cold, and at the same time ward off damp and wet. The root is tuberous and from it spring the leaves, which are all radical, having long, sometimes short, petioles or leaf-stalks. The leaves are generally about 6 inches long, oblong or elliptic, bright green, shining, and more or less wrinkled. They are regularly toothed and very handsome. It is even more floriferous than the *Ramondia* and *Haberlea* where the necessary supply of moisture is given, an essential item in the successful cultivation of the *Conandron*. In fact, nearly the same position that suits *Ramondia* will be found to perfectly agree with it. The flowers are white, varying in the different varieties to deep blue or violet. They are borne on loose, many-flowered cymes about the size of a sixpence, and are very charming. It inhabits moist rocks in the mountainous districts of Japan.—D. K.

Cross-fertilising Narcissi.—At p. 510 "J. C. B." thinks it necessary to apply pollen to the stigma more than once in order to make sure of *Narcissi* seeding. I do not think that this is at all necessary if care is taken to apply the pollen at the right time, i.e., just when the stigmas are in a receptive condition. This juncture can only be known by experience and observation. Even if the quantity of seeds in each pod is actually increased in number by repeated crossings, it does not follow that numerical increase is an advantage. Instead of a mass of small seeds in a pod, struggling for life and crushing each other out of shape—instead of competition and actual mechanical obstruction to full development, I would much prefer a smaller number of seeds, and these few large and of good quality. In a word, quality of seed is preferable to mere quantity, especially in the case of slow-growing bulbs, as *Narcissi* generally are when reared in this way. Of all *Narcissi* I find the best seed-bearers naturally to be *N. Bulbocodium*, *N. Pseudo-narcissus*, *N. muticus*, and *N. obvallaris*. These kinds seed here and elsewhere without any artificial assistance. *N. montanus* (*poculiformis*, *galanthifolius*) has just produced ripe seeds with Mr. T. Archer Hind, in Devon. The most potent of pollen seems to be that of *N. montanus* and *N. Pseudo-narcissus*, and the late Mr. Backhouse found forms of the last named to seed freely fertilised with pollen of *N. Tazetta* *States General*.—E.

SHORT NOTES.—FLOWER.

Windflowers.—In his note on these "F. W. B." enquires if *Anemone alba* is still in cultivation. I have asked the same question myself for some years. I see an *Anemone alba* in Messrs. Roozen's (of Overveen) list. It is a white flowering variety and may be the one wanted.—RUBY.

Lilium Hansonii.—In this pretty Lily the leaves are in whorls, as in the common *Martagon*, and its nodding blooms are of a deep golden yellow spotted more or less with crimson. A prominent feature is the thick, massive appearance of the petals which, from their solidity, appear to be carved out of wax. This Lily possesses a vigorous constitution and is perfectly hardy where free from stagnant moisture.—H. P.

ORCHIDS.

MR. POLLETT'S ORCHIDS.

In the neighbourhood of Bickley and Chislehurst there are hundreds of villa gardens, the owners of which seem to vie with each other in keeping them in good order. A few of them are of large size and well kept up. To the latter class belongs that of Mr. H. M. Pollett, who has during the last few years been gathering together quite a unique collection of Orchids. The houses in which they are grown are not large nor numerous, but well built and furnished with all the most recent improvements. Let us first enter

THE CATTLEYA HOUSE, a span-roofed structure with stages on each side. This house is large enough to admit of the full development of plants of medium size. When amateurs read of a little less than a small fortune being paid for a plant of Cattleya Trianae, an Aerides, an Odontoglossum, or a Cypripedium, they are apt to look at their own slender resources and to exclaim, "Orchid culture will not do for me." Those impressed with notions of this kind might learn a lesson at Mr. Pollett's—so at least I thought when admiring a few beautiful varieties of Cattleya Mendeli in the form of handsome healthy plants with two or three spikes on each, one with a handsome crimson margin to the labellum. These plants were purchased for 7s. 6d. each two years ago, and if sold by auction now they would fetch from £2 to £5 each. Thus by skilful management an amateur may enjoy the most beautiful of flowers and at the same time add to his capital. I am acquainted with an amateur who purchased some Odontoglossum crispum at Stevens's for less than a shilling a piece, and in two or three years he found that two of the plants were worth £40, while the whole of them had increased in value twenty, thirty, and forty-fold. On the other hand, if a person is wealthy and willing to pay a high price for unique plants, if kept in good growing condition, they too will increase in value. In the Cattleya house in question I also noticed a very fine form of *C. Mossiae* belonging to the white petalled type. The sepals were very faintly flushed with rose, the throat was rich orange, and the lip prettily fringed. Plants of *Odontoglossum vexillarium* grown in pans suspended from the roof were also doing remarkably well. At one time we grew our *O. vexillarium* in this way, but I found that the plants required too much attention. We found watering them more difficult, and they did quite as well, or perhaps better, in pots set on the stage with the Cattleyas. *O. Roezli* was also doing well in the Cattleya house. Probably it will be found as the plants increase in age that they will require a temperature 5° higher than usual to keep up their stamina. *Oncidium pulvinatum* in this house had very long spikes of yellow and brown flowers of small size and very numerous. As they last a long time in good condition, this plant is well worth a corner in any collection.

THE COOL HOUSE is also span-roofed, and adjoins the Cattleya house. It contains many rare and fine examples of various species and hybrids of *Odontoglossums*, *Masdevallias*, &c. There is a fine healthy plant of *Odontoglossum elegans*, supposed to be a hybrid between *O. cirrhosum* and *O. Halli*. The bulbs seem to be intermediate between the two parents, while the flowers also favour both. The ground colour is pale yellow; the sepals and petals thickly blotched and spotted with reddish brown. This rare plant was found in an importation of *O. cirrhosum*. Mr. Pollett is also gathering together some of the finest forms of *O. crispum* (*Alexandrae*), which will in time form by far the finest portion of the collection, while the best forms of *O. Pescatorei* will not suffer by comparison. Of *Oncidium Rogersi* there was a very fine specimen with three large branching spikes—very beautiful when compared with the other occupants of this house. The long spikes of *Oncidium macranthum*, too, on which large golden blossoms are sparsely placed in triplets, seldom fail to please the most exacting of

connoisseurs. *Masdevallias* also form an important feature in this well-furnished house. Their quaint, and in most instances elegant, forms are most interesting. The best forms of *M. Harryana* cannot be excelled in brilliance by any flower yet known. One of the finest of all is the Bull's Blood variety. Mr. Pollett has a brilliant and well-marked form under the name of versicolor which I had not seen before; it takes its name from the distinct shades of colour which it possesses on the lateral sepals. *M. amabilis* is not greatly esteemed, but a bright little plant of it with half-a-dozen flowers made good its claim to a nook even in this select collection. The large-flowered form of *M. Veitchiana* might claim to be the *ne plus ultra* for size and colour. *M. rosea* has not, perhaps, proved itself to be all that was expected; it is, however, a quaint-looking flower; it is both elegant and beautiful, as seen here in a compact mass with 32 flowers open on it. *M. Chimæra* had flowers fully 15 inches across; the peculiar structure of this flower and its distinct colour recommend it to cultivators. *M. Shuttleworthi* and *M. Wagneri* are both interesting and beautiful in their way. These and several others form part of Mr. Pollett's collection.

THE WARMEST HOUSE also contains some well-grown examples of the species and varieties usually found in such a house. I noticed in flower a beautifully spotted variety of *Saccolabium guttatum*, and was told it was part of Loddiges' original variety. Some of the varieties and species of *Saccolabium* are amongst the most beautiful of Orchids. *S. retusum*, for instance, is now both rare and beautiful. Most of them like the warmest house. They like plenty of light and succeed either in baskets or pots. They require light to make them flower freely. The insect pests that do most mischief is thrips, which can be destroyed by fumigating or washing the leaves with Tobacco water. A fine form of *Cypripedium Lawrenceianum* had large blossoms, and a plant of this species was of very large size. The leaves are the most beautifully marked of all the *C. barbatum* type, and it is also proving itself to be a very vigorous growing species. If Orchids are to be grown to give satisfaction they must be kept clean and in good health, which is their condition here. Indeed, they could not be otherwise under the care of such an ardent lover of plants as Mr. Pollett is.

J. D.

Vanda gigantea.—The flowering of this noble Burmese Orchid is a comparatively rare occurrence: even in the richest collections its blossoms are seldom seen. A very fine spike of it has been sent to us by Col. Charlton, who received his plants direct from Burmah. The flowers he has sent to us are as large as those of *V. Batemanni* and somewhat similar in shape. The colour is yellow, blotched heavily with chestnut-brown. It is therefore not very showy. The spikes are long and drooping. It is one of the noblest of the genus, the leaves being very broad for a *Vanda*, and though the growth is massive it is elegant.

PLANTING IN HOT WEATHER.

This should, if possible, always be done on dull days. When ground is prepared and everything is in readiness, a large number of plants may be shifted into their new quarters in the course of a few hours. It sometimes, however, happens that such a favourable occasion does not present itself, and there is but the option of planting in a dry time or of waiting on the chance of a change, and risking the injury which crowding or a root-bound, starved condition brings about. By choosing those portions of the day freest from the sun's influence, the work of transplanting may be comfortably and satisfactorily accomplished, and here it may be said that the morning is a good time, but that the evening is better, for with a good watering given in the form of a refreshing shower, and if sprinkled once or twice during the following day, their foliage will scarcely show signs of the removal. An excellent plan when planting out in hot weather

is to stick in a branch of evergreen on the sunny side of each plant or group of plants, leaving it there until they show signs of having fairly grasped the soil. There is a great difference between the progress of plants which have received these attentions and such as have more or less taken their chance when more favourable atmospheric conditions supervene. Although for a time there is no apparent benefit, the plants are gathering strength and are making a quantity of roots, the result of which is a strong and robust growth.

IN TRANSPLANTING no care or labour should be grudged that will preserve intact all the roots, for it must be said that want of scrupulous attention in this respect is a too common error, the greatest offenders being naturally young gardeners, whose experience does not allow of their realising that a dried or mutilated root means serious loss of vital energy never again to be fully restored. How often have I seen young seedlings or cuttings lying on the potting bench for an hour or more at a time, their roots in full exposure, or in planting the plants perhaps just laid into a box or basket open to the air whilst the operator leisurely committed them to the soil. I speak all the more feelingly upon this matter because I know that ninety-nine gardeners out of the hundred have at some time in their lives committed this mistake. I know I did, and when at one time I had half-a-dozen young learners with me one of my greatest troubles was to get them to realise that a root preserved, however small, was strength and progress gained. When a young cultivator once perceives the importance of roots and their action, his progress in plant culture really begins, and not before that. In planting in the open there is nothing so good as an ordinary galvanised iron pail, as it is air-tight, and if covered with a piece of cloth the plants may be kept fresh and the roots moist, no matter how drying the wind or unfavourable generally the weather may be.

ONE GREAT MISTAKE in planting is to rake the soil finely after planting, as in the course of a few days it then forms a hard crust, and if the plants are set out in a rounded bed, the greater portion of the water given runs off to the sides. The best way, I think, is to cut down straight with a trowel, spread out the roots on the side of this little trench and press firmly round the collar, leaving the soil rather crumbly on the surface. Then the water penetrates easily, and goes where it is wanted to go. This kind of planting is not so neat as when the surface is made smooth, but whoever wishes for good specimens will be ready to make a sacrifice in this respect if such is needful. There is often too great an inclination to make neatness the primary consideration in gardening operations, and plants have often to suffer therefrom.

J. C. B.

ZINC GARDEN LABELS.

I AM very desirous at this time of the year, when there are not many important gardening matters to talk about, to say a few words about garden labels. From experience I know that if a gardener has one perplexity more than another it is that of labels. Proper labelling and lasting labels are, in my opinion, of the very first importance to the horticulturist as well as to the amateur. Wooden ones painted or unpainted are good for a little time, but invariably they become obliterated, if they do not rot away. We shall never, I am sure, succeed with wood as a material for labels, and after many trials my conviction is that nothing surpasses zinc either for durability, legibility, or economy, and I hope to see the day when wood is wholly disused and zinc adopted both by amateurs and the trade. It is my intention, as briefly as possible, to show how cheaply and how readily these may be made, and if I am right in what I say, there is no reason why florists should give us an inferior label when they can, with as little trouble and expense, supply us with a permanent and indelible metal one with the plants we purchase. And now I will proceed to show how to set to work. Procure first of all a sheet of No. 13 zinc of the Veille Montagne make,

which at the present price will cost 4s. 4d., a piece of wood with a straight edge, and a four-sided sharpened bradawl. The zinc is 96 inches long; carefully mark both edges into 4-inch lengths, apply the straight edge to the opposite marks, and then thoroughly score the metal half-a-dozen times with the bradawl; after this it will break freely by bending it backwards and forwards. You will now have twenty-four pieces of zinc 36 inches by 4 inches, 4 inches being the length of the label. Now make each of these pieces into half-inch widths, and score the metal as before described, and break off with the thumb and finger. If you are very clever, you will prepare a piece of wood 4 inches in width and put a saw groove in the end of it to save your fingers this duty. This makes 1728 good serviceable labels at a cost for the material of 3d. per 100. I need not say that by varying the dimensions labels of any size may be made; nor need I say that, however awkward the amateur may be to start with, he will soon become an expert in label making. A pair of tinman's "snips," costing 3s. 6d., will enable him to point the labels or shape them in any way if he is at all particular as to appearances, or to cut those which he fails to sufficiently scratch. The small surface of the label intended to be written upon should be slightly rubbed with emery cloth to remove the grease used in the manufacture.

Where possible to prepare work beforehand, it is always desirable to write the labels before the planting takes place; then liquid ink can be used. What I have adopted is a sixty-grain solution of nitrate of silver, to be procured of any chemist; with this a quill pen must be used, but for those who have one there is nothing like a gold pen. However, we cannot always prepare work to the fore (and here comes in the charm of a zinc label), and it is desirable to write the label impromptu. Then the lunar caustic pencils sold by all chemists can be used, taking the precaution of slightly damping the surface before writing upon it. Having shown my brother labourers in the craft how to make a handy and permanent label at the smallest possible cost, I hope to see the days of wooden labels numbered. If all is not so clear as I have wished to make it, I shall be happy to reply to all enquirers. W. H. CULLINGFORD.

7, Phillimore Gardens, Kensington.

VALUE OF SUMMER MULCHING.

THE parching north-east winds, with which we have been afflicted for some considerable time past, have so dried the ground that nearly all plants are suffering, and many are looking very distressed from want of moisture, and though water may be given it seems to have but little effect. Under such circumstances the best remedy is to mulch, which should never be neglected during summer, as not only does it save an immensity of labour, but it acts most beneficially on the roots and helps the crop. When trees get a check from want of moisture in the soil, the fruit is almost sure to crack after a heavy rainfall, and especially is this the case with Pears and Cherries. Even if there were no splitting after a dry time like the present, the fruit, if not assisted, would be small, and those who are so fortunate as to have a crop left after the late frosts will find it greatly benefited by at once giving a good mulching, and then a thorough soaking of water or sewage. In the case of pyramid Pear or Apple trees, it is a good plan to draw the earth away from the stem with a hoe, so as to make a basin-like receptacle for the water or sewage to be poured in, as then, though filled again with the mulching, which should be of half rotten manure, there is no waste, for the liquid cannot escape, but quickly soaks in and down. With regard to Peaches and Nectarines and other wall trees, the way to manage them is to break up the border by pricking through the crust with a fork, when the manure should be spread on and a watering given, but the thing to bear in mind is to see that each plant has a thorough soaking, as that does far more good than the little and

often, which entices the roots up near the surface, where, if neglected for only a short time, they are apt to perish.

TO GROW FINE ROSES without a mulching is quite out of the question, but as fresh manure is objectionable on beds in certain positions, that which is more rotten and less unsightly should be chosen instead. Horse droppings, free from straw, are as good as anything that can be had, as they soon go to pieces and lie light, and if they have been used for a Mushroom bed so much the better, as they become disintegrated, and form a most capital mulch, through which water or sewage passes quickly, and which does not again escape in the form of evaporation—a circumstance easily accounted for by its non-conductibility, and this is why Cocoa-nut refuse is so valuable as a mulching. Sifted leaf-mould is also useful for the same purpose, and it has this advantage, that it may be mixed with the soil without danger, whereas Cocoa-nut fibre is almost sure to generate fungus, and should never be dug in when done with, but cleared off and carried away to be burned.

VEGETABLES.—Not only may fruit trees and plants in or coming into bloom be vastly assisted by being mulched, but vegetables of most kinds are equally benefited by being cared for in the same way; indeed, for Peas and Scarlet Runners mulching is most essential; without it the latter drop their blooms wholesale without setting, and Peas get mildewed and are unable to go on bearing and filling their pods. With a mulching and a soaking of sewage now and then, it is surprising what vigour may be thrown into them, and how indifferent they seem to heat or drought, which under such conditions do not appear to affect them. S. D.

CONCENTRATED MANURES.

ONE hardly likes to say anything that may cast a doubt on the value of artificial manures, but, speaking for myself, I can unhesitatingly say that I have no difficulty in fixing a limit to the good they do, and any one else may do the same if they will take the trouble to ascertain what plants they permanently benefit and what they injure. I would emphasise the word permanently, because it is on that the chief value of these manures should rest. My opinion is that they are valuable only for annual plants. When used with care, they may be made to do good service in the case of plants of fairly vigorous growth that are to be thrown away as soon as they go out of flower. I may mention *Primulas*, *Mignonette*, *Cinerarias*, and zonal *Pelargoniums* as plants to which artificial manures may be given with advantage, and if judiciously applied surprising results may be obtained. On the sort of plants here indicated the inexperienced may practise without doing permanent injury, but on hard-wooded plants much harm may be done by an injudicious use of stimulants. In fact, they require to be dealt with in a very cautious manner. The tendency of these manures to show the effects of the first application in a very short time is not the least of the evils attending their use, as it increases the desire to use them more and more freely; consequently, they are sometimes used in excess, and an early collapse of the plants operated upon is the result before the cultivator is aware what has caused the mischief. When applied to hard-wooded plants in small quantities, and at the most not more than twice a year, they may not do harm to such subjects as *Azaleas*, *Camellias*, *Clerodendrons*, *Allamandas*, and a few other strong-growing plants, but if used oftener than that there is great risk of the plants gradually getting into ill health after three or four years of such treatment. Practically, I do not think there is anything very injurious to plant life in any of these compounds, *i.e.*, provided the proper quantity is given, but for the most part we have to guess at the quantity, and we are still more unenlightened as to what plants they will benefit and what not. On this point I hold a very decided opinion, because I have

many times proved that some races of plants will bear more than others. For instance, *Roses* will bear stronger doses extending over a longer period than any other class of plants with which I am acquainted. On the other hand, *Fuchsias* will only bear very moderate supplies at long intervals, or both leaves and flowers will drop. Again, all the plants I have operated upon will bear a larger quantity if mixed with the soil when potted, than when put on the surface and watered in. On the whole, I look upon the plan of mixing manure with the soil as the most satisfactory. It is less spasmodic in its action, and plants of all kinds are benefited thereby for a longer time. No one could be mistaken as regards the action of any of these manures, even if they have not exceeded the quantity the vendors recommend for particular sized pots, as after the first application the plant to which they have been applied (I mean where applied on the surface) will require more water than it did before, and the larger the quantity and oftener it is applied the more water will the plants want, which plainly shows that the manure is forcing in its action, and if the needful supply of moisture is not given the result will be the reverse of what is expected. As a matter of fact, certain plants may be grown at express speed to a large size in a short time by the aid of these manures, all other things being equal; but unless such stimulating agents are used cautiously, not many plants can sustain an active life for a lengthened period under their influence. As to the value of any particular compound, I may say that I have tried a good many of them, and although their composition may vary somewhat, they are all of about equal merit for horticultural purposes. J. C. C.

MOUNT USSHER.

YESTERDAY I saw a charming old garden at Rathnew—an old mill house surrounded by beds and borders of the finest and choicest of hardy flowers. *Tropæolum speciosum* is just now setting the old house on fire and clambering up fences or twining out to the tips of *Escallonia* branches and then dangling in mid-air like a swarm of bees, so thickly set are its clusters of buds and blossoms. The garden is a small one; the Vartly River nearly brings the trout to the kitchen door, and on the other side the old mill race or stream is fringed with rocky banks, where many flowers, rare elsewhere, are quite at home, *Platycodon grandiflorum* among the number. Flowering shrubs are an especial feature, and tall *Delphiniums* of eternal blue, softest azure, or dark as indigo are noble as seen contrasted with white *Phloxes* or with *Wistaria* leaves now bathed in golden green. The place is full of odd corners happily filled; a giant *Saxifraga peltata* growing near the little stream shaded by a bridge is a picture. *Roses* are everywhere, and in a sunny yard *Clematis* and *Ivy* fight for wall and roof space. Woodbine scents the air, and butterflies hold their earliest ball in this sunny old place among the white *Lilies* and *Irises* and a thousand other delightful flowers. Certainly the garden is sheltered, and then the Wicklow climate is proverbial, but to these natural advantages good taste and some labour of love have been added to good purpose, and the result is a garden paradise. F. W. B.

NOTES FROM BADEN-BADEN.

BRUNELLIA WEBBIANA is a plant for everybody's garden, far superior to *B. grandiflora*. Its large beautiful violet flowers are produced in numerous, dense, showy spikes. Shining like glittering gold, *Grindelia robusta*, a neat showy perennial, bears varnished, bright yellow, Aster-like flowers. *Lactuca dubyaca*, from the Himalayas, is a more modest plant, yet it merits a place in every good collection; its flowers are sulphur-yellow, beset with bristles. An edging of *Erythraea diffusa*, with thousands of its shining deep rosy flowers, is admired by every visitor; it is a low trailing or creeping plant, every branch of which produces a flower-stem only 4 inches in height. *Knautia magnifica* is a beautiful rose-coloured perennial

Scabious, discovered a few years ago by Professor Orphanides in Greece; it is, however, quite hardy. *Aster diplostephioides*, for the introduction of which we are indebted to Mr. Elwes, is a Himalayan perennial of first-rate properties; its flowers are large and numerous, the rays being bright lavender, the disc black, and the anthers orange, all blending harmoniously, and producing a very good effect. This is as desirable a plant as *Senecio pulcher*.
MAX LEICHTLIN.
Baden-Baden.

SOCIETIES.

ROYAL HORTICULTURAL SOCIETY.

JULY 8.

SOME very fine cut Roses and hardy flowers were exhibited on this occasion. Of the former, Messrs. W. Paul and Son were the largest exhibitors, one whole table being occupied with their productions, for which a silver-gilt Knightian medal was awarded. Messrs. Veitch also furnished some six boxes filled with grand blooms of A. K. Williams, Marie-Baumann, Souvenir d'Elise, and others. Along with these Roses the same firm exhibited several boxfuls of cut blooms of Iris Kämpferi, all of which were fine in form and varied in colour. One boxful of beautiful blooms of Carnations was also shown by the same growers. Along with these also were shown basketfuls of a variety of *Andromeda speciosa*, a fine bold kind with large drooping spikes of clear pure white bells. Behind these were staged some distinct colours of large-flowered *Campanulas* of the calycanthema type. A silver Knightian medal was awarded. Messrs. Ware, of Tottenham, had an unusually large and varied assortment of cut flowers of hardy herbaceous plants and cut specimens of the best varieties of Lilies now in season. Of the latter, *L. dalmaticum* was conspicuous on account of its rich, dark colour. Cut Roses were shown by the same firm, among which were two boxfuls of *Rosa rugosa rubra* and its white variety. A silver-gilt Banksian medal was deservedly awarded to this collection. Messrs. Kelway and Son staged a varied assortment of hardy flowers, among which the early-flowering forms of *Gladiolus* were in good condition. *Aquilegia Skinneri* and *Delphiniums* were also prominent, and there was likewise a fine boxful of Tea-scented Roses in good condition, and single and double *Pyrethrums*. To this collection a silver Banksian medal was awarded. Mr. Chas. Turner had some fine Carnations and Picotees. Among the former a purple flake variety named Florence Nightingale was conspicuous. Some few kinds of new Melons were shown, but none possessing sufficient merit to gain an award. Mr. House, of Peterborough, exhibited his Perfect Marrow Pea grown in the open field without being staked, for which purpose this variety is evidently well suited; the pods were well filled and of good size. Two kinds of Apples were also shown. The exhibits placed before the floral committee were not numerous, but some productions of considerable merit were shown.

First-class certificates were awarded to

CATTLEYA GASKELLIANA ALBA, a distinct form, well flowered and cultivated in a shallow Orchid pan. From Mr. Crawshaw's garden, Rosefield, Sevenoaks.

AERIDES ILLUSTRIS.—Somewhat like A. Schroederi in growth, with brighter flowers borne on a semi-erect spike; a fine variety. From Sir Trevor Lawrence's collection.

CYPRIPEDIUM CURTISI.—An improved species with distinct markings. From Sir Trevor Lawrence.

CATTLEYA CALUMINATA.—Partaking in a measure of the C. Aclandiae type; rather more robust, but not so vigorous as C. Leopoldi. Flowers freely spotted on both sepals and petals on a pale pink ground; lip like that of C. Leopoldi. A first-class variety. Also from Sir Trevor Lawrence.

INDIGOFEA FLORIBUNDA ALBA.—A hardy shrub; very distinct; beautiful both in foliage and flower. From Messrs. Veitch & Sons.

MEDINILLA TRYSMANIANA.—A kind with erect panicles, differing both in colour and habit from M. magnifica. Supposed to be identical with M. amabilis. Messrs. Veitch & Sons.

SPIRÆA PURPUREA.—In the way of S. palmata but with smaller foliage veined with purple, dwarf habit, and free flowering. From open ground. Messrs. Veitch & Sons.

IRIS EARL GRANVILLE, I. PRINCESS MAUD, and I. MARY ANDERSON, all of the I. Kämpferi type, but quite distinct, the former having very large flowers. All from Messrs. Veitch.

CARNATION CELIA.—Shown as a border variety, and stated to possess the property of retaining the colour of its flowers in the sun. Pale pink. Fine flower. Messrs. Veitch.

CARNATION MARTHA.—Distinct as regards markings, flowers rather small, presumably belonging to the tree section.

DELPHINIUM GLOIRE DE NANCY.—A double kind with pale blue or lavender-coloured flowers, of no particular merit in colour against older kinds. From Mr. Bealby.

Votes of thanks were awarded to Mr. Crawshaw for a fine form of *Cattleya gigas*, shown as C. Sanderiana.

To Mr. Vanner, of Chislehurst, for Vanda Sanderiana, bearing an erect spike with eight flowers of fine size and in fresh condition.

BEGONIA VIRGINALIS.—A double white with fine flowers and dwarf in habit. From Messrs. Laing.

SWEET PEAS from Mr. Eckford, and one or two new Roses from W. Paul & Son were also shown, but no award given.

Scientific committee.—Professor M. Foster in the chair.

Lansia tibetica.—Mr. Loder exhibited this plant, figured in "Hooker's Journal," 1857, but which does not appear to have flowered in England before. *Ranunculus cortusifolius*.—He also showed this fine species and a white Orchis resembling O. pyramidalis in form. It came from Rev. H. Crewe's collection; also *Gentiana bavarica*, finely grown plants with deep violet-blue blossoms, and he also brought specimens of *Plantago major* and *lanceolata* with foliaceous bracts, a well-known monstrosity.

Monstrous Geum rivale.—Mr. Boulger described a form of this plant with a foliaceous calyx, corolla of three rows of petals, stamens reduced in number and proliferous; instead of a pistil the prolonged axis bearing a normal flower. This form was described by Dr. Hill in 1758.

Chlora perfoliata.—Mr. Boulger noticed that this plant opens its flowers at 9 a.m. and closes them about 4.30 p.m., and a specimen which was placed in his vasculum with closed blossoms was found to be opened at the usual hour, though in the dark.

Report on Potato culture at Chiswick.—Dr. Masters reported that the second visit to Chiswick of the sub-committee had been made, and that, though the disease was present in the garden it had not yet reached the experimental plot. The second series were earthed-up in the manner as directed by Mr. Plowright.

Puccinia Vinca.—Mr. W. G. Smith exhibited plants of Periwinkle attacked by this fungus, which does not, as a rule, appear to be very common.

Honeydew.—Mr. Bennett called attention to the fact that the Limes are very abundant in Honeydew, and the question was again raised as to the part aphides play in its production. The general opinion (as expressed previously when the question was raised) was that it is more due to the intense heat causing an alteration in the starch into a sugary substance.

Indigofera floribunda alba.—This plant was exhibited by Mr. Veitch, but as it had not the peculiar irritability of the stamens characteristic of species of *Indigofera* as described by the Rev. G. Henslow in the Journal of the Linnean Society, it was referred to Dr. Masters to ascertain the correct name.

Picea Nordmanniana attacked by aphid.—A horticulturist forwarded branches of this tree attacked by aphides, which were described as committing great destruction amongst plants of this species and also of *Abies grandis*. It was referred to Mr. MacLachlan for examination and report.

Dried Rhubarb stalks. Mrs. Jones forwarded a sample of Rhubarb from which nearly all the juice had been expressed and dried. She recommends its use in winter as a preserve. It was referred to the secretary for examination and report.

Hybrid Digitalis.—Mr. A. Dean sent specimens of a supposed hybrid between D. purpurea and D. lutea. The late Professor Henslow described a natural hybrid between these species, the blossoms of which were decidedly intermediate in colour. Those sent by Mr. Dean appeared to be much yellower and with less purple. It was given to the Rev. G. Henslow for examination and report.

Monstrous Antirrhinum.—The seedling Snapdragon Rowsham Pet, forwarded to the last meeting by Mr. James King, of Aylesbury, who received a certificate for it, appears to have a tendency to the "peloric" or regular condition. The calyx is quite normal. The corolla has the two lateral petals developing small labial yellow ridges, thereby imitating the anterior or lip petal. Each of the two posterior petals constituting the hood are bifurcated above, while the corolla, instead of being personate and closed, is widely expanded, the lobes forming an irregular corrugated rim. The four stamens are abnormally twisted, and bear contabescent anthers. The position of the normally absent fifth stamen on the posterior side is occupied by two staminodia with petaloid crozier-shaped structures, somewhat resembling the petals of *Aconitum*, together with a short filiform structure between them; the pistil is normal.

CRYSTAL PALACE ROSE SHOW.

THIS exhibition was held on Saturday last, not, as in previous years, in the centre transept, but in a large tent erected for the purpose at the end of the lower terrace. The arrangement of the exhibits was good, and Roses were plentiful, but not so good as usual. The best, however, that could be obtained were there, and the show, notwithstanding the season, was undoubtedly a success. Five classes were set apart for amateurs, and the remainder, twenty-three in number, were open to amateurs and the trade alike. In the class for seventy-two varieties, single trusses, there was a good competition, Mr. B. R. Cant, of Colchester, easily taking the first prize with an evenly matched, well grown collection; the finest blooms in it were: Abel Carrière, Duke of Teck, Catherine Mermet, John Hopper, Madame Welch, Comtesse de Nadaillac, very fine Tea; Souvenir de Paul Néron, Moiret, Marie Baumann, extra fine; Devoniensis, a superb Rose; Auguste Neumann, Caroline Kuster, also very fine; Lord Macaulay, a fine bloom for this variety; Charles Lefebvre, Madame Marie Verdier, Reynolds Hole, Maréchal Niel, a grand bloom; Madame Isaac Perrière, a fine and distinct Rose; Marie Van Houtte, Souvenir d'Elise, Boule d'Or, Niphetos, Le Havre, Marie Rady, &c. Messrs. Paul & Sons, who were second, had a really good collection of clean, well-grown and neatly staged blooms. Particularly fine were A. K. Williams, Boule d'Or, Souvenir d'Elise Vardon, Mons. E. Y. Teas, and Count Raimbaud. Messrs. Keynes, Williams & Co., of Salisbury, were third. In Class 2, forty-eight varieties, three trusses of each, Mr. B. R. Cant was again placed first. He had particularly fine blooms of Niphetos, A. K. Williams, Catherine Mermet, and La Boule d'Or. Messrs. Paul & Sons were a good second, and on their stands the old General Jacqueminot was very fine; Lady Mary Fitzwilliam was also in fine form; Alfred Colomb, Devoniensis, and S. R. Hole were likewise good, the latter being rich and glowing in colour. In Class 3, 24 Roses, 3 trusses of each, Mr. B. R. Cant, of Colchester, was awarded the first prize, but he was subsequently disqualified, owing to a clause in the schedule which does not permit exhibitors in Classes

1 and 2 to exhibit in 3 and 4. Messrs. John Jefferies & Sons, of Cirencester, were therefore placed first; the best two blooms on their stands were Countess of Oxford and Madame Gabriel Luizet. Of 24 Roses, 1 truss, Mr. F. Cant was first, with a really good stand, in which La Boule d'Or, Duke of Edinburgh, Duke of Teck, and Jean Ducher were in good form. Messrs. J. Burrell & Co., Howe House, Cambridge, were second, and amongst their blooms Lady Mary Fitzwilliam, Nardy Frères, Countess of Oxford, Duke of Wellington, rich in colour, and some others were good.

Tea and Noisette Roses were shown in trebles, and a most beautiful group of blooms was staged, Mr. B. R. Cant being first, with large and clean flowers, the best of which were La Boule d'Or, clear-shaded yellow, with cupped petals; Comtesse de Nadaillac, yellowish buff, large and fine; and Anna Olivier. Mr. F. Cant, who was second, had Souvenir d'Elise (very fine), Devoniensis, Marie Van Houtte, Madame Willermoz, and others. Messrs. Paul & Sons, who were third, had Rubens, Jean Ducher, and Etoile de Lyon, fine, but Madame Cusin was not in good form. In the class of yellow Roses, 3 trusses of each, Mr. B. R. Cant was again first; he had only eight varieties, but they were good. They consisted of Etoile de Lyon, Maréchal Niel, Madame Hippolyte Jamain, Madame Margottin, Jean Ducher, Madame Welch, Marie Van Houtte, and La Boule d'Or. In white Roses Mr. B. R. Cant was again first, with Rubens, Merveille de Lyon, Madame Bravy, Niphetos, Devoniensis, and Innocente Pirola. For pink Roses Messrs. Paul & Sons were first, with 16 varieties, the best of which were Captain Christy, Lady Mary Fitzwilliam, Madame Gabriel Luizet, Pride of Waltham, and others. In crimson Roses Mr. B. R. Cant was first with Horace Vernet, Xavier Olibo (rich dark crimson), A. K. Williams, Beauty of Waltham, Charles LeFebvre, and Duke of Wellington. For velvety crimson kinds Mr. B. R. Cant was again first with Abel Carrière, Prince Camille de Rohan, Prince Arthur, Reynolds Hole, Horace Vernet, Mdme. Charles Maurice, Sultan of Zanzibar, and Duke of Wellington. In the class for eighteen trusses of any Tea Mr. B. R. Cant held the highest place with fine blooms of Souvenir d'Elise; second, the Rev. J. Page Roberts, The Rectory, Scole, Norfolk, with an almost equally fine exhibit, consisting of the same variety; Mr. G. W. Piper, The Nurseries, Uckfield, was third with smaller blooms of the same variety. The next class was for eighteen trusses of Marie Baumann, and Mr. B. R. Cant was first with fine blooms in good condition. For eighteen trusses of Captain Christy or similar coloured H. P., Mr. Bennet, of Sleperton, was first with Lady Mary Fitzwilliam; Messrs. Paul & Sons were second with Captain Christy; and Messrs. Cooling & Son third with La France. Messrs. Paul & Sons received a second prize for eighteen trusses of any Rose of the Prince Camille de Rohan type, the variety being Abel Carrière. In the class for eighteen trusses of François Michelin or other Rose of that type, Mr. Grant, of Ledbury, was first with Marquise de Castellane; second, Mr. B. R. Cant, with Marie Verdier; third, Messrs. Bunyard, with François Michelin. For the same number of trusses of A. K. Williams Mr. B. R. Cant was first, Messrs. Paul & Son second, and Mr. John House, of Peterborough, third. In the class for eighteen bunches of W. A. Richardson, three trusses to a bunch, Mr. House was the only exhibitor, and was awarded the first prize. In the class for eighteen bunches of Moss Roses the first prize was awarded to Messrs. Paul & Sons, who had good examples of White Bath, Little Gem, Salet, Mdme. E. Orry, Cristata, Lanei, Comtesse Murinais, Gloire des Mousseuses. In the class for eighteen trusses of Niphetos Mr. B. R. Cant was first, Messrs. Keynes second, and Mr. Piper third. Messrs. Paul were awarded a second prize for eighteen bunches of Rosa polyantha in variety.

In the amateurs' class there was a fairly good competition, the flowers, considering the difficulties that had to be overcome this season, being in capital condition. In the class for forty-eight

varieties, distinct, single trusses, the first prize was awarded to Mr. J. W. Grant, Hope End, Ledbury, whose varieties were George Moreau, Hippolyte Jamain, Duchesse de Vallombrosa, Duc de Rohan, Baroness Rothschild, Countess of Oxford, Innocente Pirola, Duke of Edinburgh, Ulrich Brunner fils, Exposition de Brie, Mad. Sophie Fropot, Marie Rady, La France, Alfred Colomb, Niphetos, Dupuy Jamain, Mons. Woolfield, Horace Vernet, Marguerite de St. Amand, Victor Verdier, Madame Hippolyte Jamain, Etienne Levet, Elie Morel, Duc de Montpensier, Marie Verdier, Charles Darwin, Pride of Waltham, Fisher Holmes, Madame Gabriel Luizet, Perle de Lyon, Capt. Christy, Baron de Bonstetten, Anna Ollivier, Louis Van Houtte, Sénateur Vaisse, François Michelin, Victor Verdier, Marie Baumann, Marie Van Houtte, A. K. Williams, Marquise de Castellane, John Stuart Mill, Caroline Kuster, Mrs. Jowitt, Le Havre, and Comtesse de Serenye.

For 24 varieties Mr. Budd, Bath, was first with Louis Van Houtte, Marquise de Castellane, Duke of Wellington, Capt. Christy, Fisher Holmes, Violette Bouyer, Horace Vernet, François Michelin, Duke of Connaught, Lady Sheffield, A. K. Williams, Heinrich Schultheis, Duke of Edinburgh, Pride of Waltham, Le Havre, La France, Alfred Colomb, May Quennell, Countess of Oxford, Sir Garnet Wolesey, Madame Gabriel Luizet, and Prince Arthur.

For 24 varieties, three trusses of each, the first prize was awarded to Mr. J. Davis, Salisbury, who had Caroline Kuster, Madame Sophie Fropot, Charles Darwin, Marguerite de St. Amand, Marie Baumann, Madame Lacharme, Cheshunt Hybrid, Duke of Edinburgh, Marquise de Castellane, Horace Vernet, Lady Mary Fitzwilliam, A. K. Williams, Mdme. Thérèse Levet, La France, Alfred Colomb, Mons. Noman, Beauty of Waltham, Lord Macaulay, Duchesse de Vallombrosa, Prince Camille de Rohan, Duchess of Bedford, and Princess Beatrice. Mr. J. Brown gained a first prize for twelve, the varieties being Pride of Waltham, Horace Vernet, Dr. Andry, Marie Rady, Eugène Furst, A. K. Williams, Xavier Olibo, Le Havre, Leon Renault, Pierre Notting, and La France.

For 12 Teas, three trusses of each, the Rev. F. Page Roberts was first with Mdme. Hippolyte Jamain, Madame Margottin, Catherine Mermet, Caroline Kuster, Niphetos, Jean Ducher, Boule d'Or, Madame Bravy, Maréchal Niel, Innocente Pirola, and Perle des Jardins.

In addition to the Roses, prizes were offered for a group of tuberous Begonias in bloom, and Messrs. Laing & Co., of Stanstead Park, showed a collection which surpassed all their previous efforts in that direction. It contained many new seedlings of sterling merit. The plants were arranged with due regard to harmony of colour, and a few were suspended in baskets. The single sorts consisted wholly of the best kinds. The best doubles were The Czar, rich crimson; Prince of Wales, perhaps the best double crimson; Dr. Duke, a very large red flower; and Canary Bird, clear orange-yellow. Messrs. Laing received first-class certificates for the following new Begonias: Golden Queen, a single variety with the largest flowers of any yellow kind yet raised; White Perfection, undoubtedly the best white variety yet raised, the flowers being circular, of large size, and good substance; Rose Perfection, a rich clear rose, flowers also of good form and substance; Mr. A. Forbes, a large scarlet flower with a suffusion of white in the centre; Alba plena with very double flowers, forming pretty rosettes of pure white. A first-class certificate was also awarded to Mr. Charles Turner, of Slough, for garden Pink Captain Kennedy. It has large full flowers with heavy purple lacing. Mr. Charles Turner gained a first prize for twelve Carnation blooms, the best being Tom Power, Wm. Skirving, Tim Bobbin, Sybil, Master Fred, Jim Whittaker, Lady Gardiner, Sarah Payne, John Keet, Harrison Weir, and Ben. Simonite. Mr. J. Douglas, gardener to F. Whitbourn, Esq., Great Gearies, Ilford, was second. Mr. Turner was first for Picotees with a seedling, Thomas Page, Mrs. Rudd, Prince of

Orange, Ann Lord, Lord Valentia, Clara Penson, Janira, Mrs. Lord, Constance Heron, seedling and Emily; also for twelve Pinks, the sorts being Borard, Lustre, Mildred, Shirley Hibberd, Eurydice, Bertram, Victory, Captain Kennedy, Constance, Dr. Masters, Harry Hooper, and Minerva. Besides this stand of Pinks Mr. Turner exhibited a large collection of named varieties which were greatly admired.

In the extra classes was a very fine collection of cut Rose blooms exhibited in round baskets by Messrs. Wm. Paul and Son, of Waltham; and from Messrs. Rivers, of Sawbridgeworth, came a remarkably fine collection of Peaches, Nectarines, Plums, and Cherries, the whole gathered from pot trees.

EDINBURGH SUMMER SHOW.

JULY 9 AND 10.

THE summer show of the Royal Caledonian Horticultural Society is generally a very good one, cut Roses being one of the principal features, but this season it appears the Scotch Roses are not nearly up to the mark, and the show as a whole was considered by *habitués* as being very scanty and inferior to those of previous years. It was held, as usual, in the Waverley Market, a capital place for a flower show, so far as abundant space is concerned, but, on the other hand, it does not admit of a variation of surface; consequently the shows from a picturesque point of view are not to be compared with London shows held at the Regent's Park and other important places. Poor as the show was considered to be, there was much to interest one, and there were some really fine collections, particularly the miscellaneous groups and hardy plants. One of the most important groups of miscellaneous plants was that from the nurseries of Messrs. Ireland & Thomson, who took the first prize. This was really arranged tastefully—not in the conventional sloping-on-all-sides style. Bold plants of highly coloured Crotons and graceful Palms rose from the centre from a carpet of greenery, and the whole was enlivened with a not too abundant admixture of flowering plants, conspicuous among which were some choice flowering Orchids. Orchids seemingly are beginning to be known and appreciated in Scotland, as this firm is doing a good trade in, not the commoner kinds only, but really first-rate varieties. One of the finest *Odontoglossum crispum* that we have seen was in this group, large in flower and spotless, except the lip. *O. vexillarium* and *O. citrosum*, together with late-flowering plants of *Cattleya Mendeli* and a fine form of *Warneri* and *Dendrobium Bensoniæ* were among the most noteworthy Orchids. The plant that most attracted us, however, was *Rondeletia æmula*, a species which, though not new, is very seldom seen. It is different from any other cultivated *Rondeletia*, and more resembles a *Bouvardia*, particularly *B. strigosa*; the flowers are tubular, and of a rich carmine-crimson. A large and profusely flowered plant of this was a beautiful object. Another rarity was the new *Abronia sinuosa*, with elegant foliage like that of a miniature edible Fig. A new Maiden-hair Fern, a seedling from *A. tenerum* and named *A. Mackenzii*, is a most charming variety, with pea-green fronds with the pinnae larger and more divided than those of *A. tenerum*. A wonderfully fine specimen of *Nepenthes Mastersiana*, with pitchers nearly a foot in length and very highly coloured. At the opposite end of the building an extensive and interesting group was picturesquely arranged by Messrs. Dicksons & Co., Waterloo Place. We were pleased to see that the plan of arranging the plants in little colonies or groups of one kind is being followed more generally, instead of the incongruous mixtures one usually sees. The background of the group was formed of tall Tree Ferns, huge Himalayan *Rhododendrons*, Screw Pines, New Zealand Flaxes (variegated), and bold foliaged plants of a like character. For example, there were gatherings of *Pelargoniums* round the bases of the Palms, groups of cut Roses, *Delphiniums*, night-flowering Tobaccos, white *Gladioli*, Harrison's Musk, *Lobelias*, English Irises, the whole forming a harmonious group. The specialities in the

group were a fine *Eucharis grandiflora* (amazonica) with about a score of spikes, show and fancy Pansies, Pinks, and Marigolds, among the latter being the annual Cape Marigold, *Dimorphotheca* (Calendula) *pluviatilis*, which has large white Daisy-white flowers and purple exteriors. From the Comely Bank Nurseries, one of the oldest and most noted of Scotch nurseries, Messrs. Cunningham & Fraser had a large and most interesting group of a miscellaneous character. Some of these were the following: *Blandfordia nobilis*, not often seen; *Davallia Nova-Zelandiae*, *Microlepia anthuriscæfolia*, two charming Ferns for the greenhouse. Messrs. Methven's large group in the competitive class included a great variety of Crotons and other fine-foliaged plants interspersed with such interesting plants as *Urceolina pendula*. Messrs. Laird's group was a very fine one and well arranged. It was made highly attractive by large and well-flowered plants of *Gloxinias* and *Pelargoniums*.

The best gardener's table was an uncommonly fine one, very tastefully arranged by Mr. Buchanan's gardener. The style of arrangement, too, was good. From a carpet of Maiden-hair Ferns arose numerous choice Orchids, such as *Dendrobium Dearei*, *Odontoglossum vexillarium*, *Cattleyas*, *Phalenopsis*. The plan of arrangement adopted by this exhibitor should serve as a pattern to others who arrange plants at the Edinburgh shows.

FINE-FOLIAGED PLANTS included some uncommonly fine Tree Ferns, notably one of *Lomaria gibba*, with a stem fully 3 feet high and a huge spreading head. Coleuses were shown grandly, there being huge pyramids 5 feet high. *Caladiums* were as fine as we are accustomed to see them at the Crystal Palace shows, the pair from Mr. Grossart being the finest stove and greenhouse Ferns which we have seen about Edinburgh; and the hardy forms are only to be compared with the grand collections that are shown as a rule at the Manchester shows. Three very fine specimens of Filmy Ferns, viz., *Trichomanes reniforme*, *T. radicans*, and *Hymenophyllum nitidum* were shown by an amateur—Mr. Anderson, a letter carrier, to whom much credit is due.

ORCHIDS.—There was a fair show of these, the finest group of four being from Mr. McDonald's garden at Woodlands, Perth, who had *Cattleya Skinneri*, very fine with ten flowers; *Cattleya gigas*, with a spike of four flowers; *Odontoglossum Uro-Skinneri*, with three spikes. Among other plants was a very fine form of *Vanda suavis* from Mr. Grossart. The best two Orchids came from Mr. Norrie's garden; they were *Odontoglossum vexillarium* and *Phalenopsis grandiflora*. A specimen of *Epidendrum prismaticum*, with twelve spikes, was sent by Mr. P. Walker, Bonnybridge. *Bletia Shepherdii*, an exceedingly highly coloured variety, and *Barkeria elegans*, one of the prettiest of the genus, we noticed in the miscellaneous groups.

Hardy plants were a much admired and highly interesting feature of the show, being far finer than we are accustomed to see them about London. Miss S. Hope, of Wardie Lodge, contributed most conspicuously to the display, her group occupying a large space. Among the plants we noted as being very fine were *Campanula trachelium* alba; *C. alpina*, a tuft of this rare species a foot across; *C. pumila*, a foot across; *Saxifraga McNabiana*, *Dianthus sinensis* fl.-pl., *Campanula trachelium* alba, and *C. carpatica* alba. Mr. Robertson Munro showed a highly interesting and well-grown collection as follows: *Campanula G. F. Wilson*, a pretty new hybrid between *C. pulla* and *C. pumila*; *Armeria cephalotes* alba, very rare; *Inula Hookeri*, large and showy; *Sidalcea malvaeflora*, *Orchis maculata superba*, *Higgleclere*, mule Pink; *Primula floribunda*, *Carnation Grenadin*, *Pentstemon centranthifolius*, *Ascot Pink* (for a cutting Pink Mr. Robertson considers this the best of all), *Triteilae Murrayana*, very fine; *Campanula nitida*, *Teucrium pyrenaicum*, *Houstonia cœrulea*, *Orchis foliosa*, with fifteen spikes; *Campanula grandis* alba, *White Martagon Lily*, and *Dianthus alpinus*, a specimen a foot across covered

with flowers. *Saxifraga pyramidalis* had a class all to itself, and certainly such a beautiful plant deserves the distinction. There were, however, but two exhibitors of two plants, the best being a pair fully a yard in height, the other representing the typical form, having pyramidal spikes of pure white flowers.

CUT FLOWERS contributed largely to the exhibition. As we before remarked, the Roses were not very fine from Scotch growers, but some admirable blooms came from Messrs. Hugh Dickson, of Belfast, who seemed to secure the chief of the prizes. Mr. Smith, of Stranraer, likewise showed creditable blooms, but not equal to those we see about London. Pansies, Violas, and other florists' flowers which are made such a speciality of by some of the Edinburgh nurserymen were shown well. Messrs. Cocker had a fine stand of Violas, the blooms being set up well with foliage, and Messrs. Dicksons and Co., Waterloo Place, won the first prizes for show and fancy Pansies, both very uncommonly fine. Stove and greenhouse cut flowers were admirably shown by Messrs. Ireland and Thomson, a very fine form of *Anthurium Scherzerianum* and *Swainsona Osborni* being the most noteworthy on the stand. Pinks, single as well as double, were shown by Messrs. Dicksons and Co., the singles being the more novel; some indeed think them prettier than the doubles, and they seemed to be admired the most.

FRUIT AND VEGETABLES.—There was a fair display of both fruit and vegetables, though not so large of course as at the September show. Some very fine Black Hamburg Grapes (two bunches) were sent by Mr. Johnston, of Glamis Castle, for the first prize, and some equally fine Muscats of Alexandria were shown by Mr. Boyd, who also showed excellent Black Hamburgs. The other black Grapes of other kinds were *Madresfield Court*, very fine. Strawberries were few, but excellent, particularly those from Mr. J. Lamont, who took the first prize with very fine fruits, the Duke of Edinburgh variety being prominent in both collections. Peaches and Nectarines were good, Elruge being first among Nectarines, and Royal George among Peaches. Cherries, Figs, and Melons were represented as fine as could be wished. The only collection of fruit from Mr. McKelvie was a credit to the Broxmouth gardens, every dish being excellent. Vegetables were numerous and of high quality, particularly the collections of twelve sorts from market gardeners about Edinburgh.

CHISWICK GARDENS.

SOME remnant of the old glory which gathered about these gardens thirty years ago may be said to have shone forth on Thursday, the 3rd inst., when the annual exhibition of the Chiswick and Turnham Green Horticultural Society was held there. The Grass plot on the south of the council room, now rich with verdure, formed an excellent site for the show tent, and visitors had the privilege of roaming about the gardens and examining the many objects of interest seen there. Each succeeding year a series of valuable plant trials take place here, and it is not too much to state that they are always carried out in the most complete and reliable manner, and if the results are not always satisfactory to those who send samples, they are what would occur elsewhere. In looking through the glass houses recently, one could not but note the activity and hopeful promise that everywhere prevailed. The great viney is in excellent condition, and there is a good promise of fruit. The same remark holds good respecting the long, narrow viney, where there is a rare growth of foliage and a promise of a heavy crop of fine bunches. The large stove house contains a very fine collection of Tomatoes in pots fast coming into fruit. One of them, the Chiswick Red, one of the Pear-shaped types, is very early and wonderfully prolific. It may be seen growing upright from a pot, and also against the roof of the house, and in both positions it is indeed all that can well be desired. Unhappily, disease is beginning to attack the plants, affect-

ing stems and leaves alike. The large Fern house is full of healthy specimens of that class of plants, also Palms and other ornamental-foliaged plants. In the small span-roofed house usually devoted to *Pelargoniums* there is an excellent trial of *Adiantums*, quite a representative collection having been gathered together.

There is, as usual, a fine lot of tuberous-rooted Begonias, and near these a very fine collection of Ivy-leaved *Pelargoniums*. Among these *Gloire d'Orleans* is well deserving special mention, being such a good grower and so very free and so handsome in appearance. There is also a good collection of the double and single zonal *Pelargoniums*. *Torenia Fournieri* is a conspicuous object, and so is a group of the useful *Impatiens Sultanii*. There is, moreover, a collection of Begonias of the Rex type, including as many as fifty varieties. Of *Caladiums* there is a large number, including the newest put into commerce by Messrs. Van Houtte and others. The large Rose house is in good condition and producing plenty of bloom.

OUT-OF-DOORS every plot of ground is occupied by some interesting crop. There is no slackening of the work of producing new Peas, something like seventy samples having been sent to Chiswick for trial. Of Potatoes, there are many reputed sorts. Some are for the inspection of the fruit committee, others for the committee of the International Potato Show, and altogether there are about 150 samples. Of Cauliflowers, there are some fifty samples, but the prevailing drought is unfortunately unfavourable for the accuracy of the trial. Of Broccoli, there are some sixty samples; and of Maize, about thirty varieties. Anyone interested in Indian Corn will have an excellent opportunity for comparing the different varieties. There is also a trial of Capsicums.

THE HARDY FRUIT CROP, once so full of promise, is unfortunately a failure. There are but few Apples, and it is worthy of note that *Blenheim Orange* is one of the best bearers this season. Pears and Plums are also a failure. The trees here, as elsewhere, are much blighted, and some drenching showers are still badly needed. Cordon Apple trees appear to be suffering from an attack of American blight; indeed, Apple trees generally appear to be much infested with this pest during the present summer.

IN THE FLOWER WAY there is much to interest. Foremost is a large and full collection of single Dahlias sent by Mr. T. S. Ware, of Tottenham. Then there is a full collection of Asters, but the dry weather interferes with the proper development of the plants. As usual, there are many beds of *Pelargoniums*, to show the adaptability of certain varieties for bedding purposes. There are also beds of the leading varieties of *Lantanas*; there are some very fine *Antirrhinums*, *Pyrethrums*, and *Potentillas*. There is, as usual, a large collection of bedding Pansies and Violas, and a very fine lot of Clapham's strain of *Mimulus*. The new form of *Calendula officinalis* Meteor, named Prince of Orange, is showing itself to good advantage, and a collection of single forms sent by one of the Italian seed houses will be inspected with interest.

R. D.

Pelargonium (Constant Reader).—Pretty, but of no commercial value.

Carnations (R. T.).—All apparently very good, especially the striped sorts and the rosy pink kind.

Sweet Williams (W. Caudwell).—Pretty, as all Sweet Williams are, but nothing uncommon.

Strawberry (A. A.).—Apparently Sir Joseph Paxton, but we are not sure, as the fruit had got smashed through bad packing.

Roses (J. W. and W. T.).—Roses can only be named with any degree of certainty by a specialist who has a collection at hand with which to compare them. The collection of old-fashioned kinds is extremely interesting, especially the single white, which is well worth careful attention.

Names of plants.—A. T. F.—*Quamoclit* (*Ipomœa*) *coccinea*.—J. M.—*Geranium sanguineum*.—C. L.—*As-trantia helleborifolia*.—K. A. S.—*Veronica incana*, *Bupththalmum grandiflorum*, *Iris fulva*, *Dianthus deltoideus* var. *albus*.—Miss T.—*Thalictrum rugosum* var. —Colonel S. W.—The flower sent is that of a variety of *Hemerocallis flava*, of which several distinct garden forms are to be met with.

No. 661. SATURDAY, July 19, 1884. Vol. XXVI.

"This is an Art

Which does mend Nature : change it rather ; but
THE ART ITSELF IS NATURE."—*Shakespeare.*

SCHEME FOR A GARDEN EXHIBITION.

THE public are so tired of ordinary flower shows, which have not done their proper part of improving gardens, that a true garden exhibition might be of the greatest delight and use to the English nation. The following scheme suggests what might be done at South Kensington :—

Flower gardens, of varied character and careful design, executed by experts, such as a bedded-out garden, with special reference to tender plants which grow well in the London air ; rock gardens ; coloured leaf borders, as at Battersea.

Japanese gardens artistically formed by Japanese artists, showing their splendid Irises and other summer-blooming plants ; their methods of staking, watering, sheltering in Japan, where there are no greenhouses.

A real Chinese garden, by Chinese artists.

Dutch gardens, with the bulbs in their seasons in rotation, and method of propagating these bulbs.

Hardy plant borders, reproducing, as near as may be, those of known excellence, with a special view to improvement of London squares and parks, and also flower gardens generally.

A sweet-scented garden of open-air plants.

A night-blooming garden. Some plants, mostly deliciously scented, only bloom at night, and are quite hardy, doing well in London. To this might be added a hothouseful of Cereuses and other night-blooming plants.

A garden all of one colour ; another of another colour ; also possibly a garden of plants all blooming in one particular month.

A hardy Bamboo and Palm garden.

English cottage gardens.

London villa gardens, with plants known to grow perfectly in London.

Improved Rose gardens.

Rhododendron and Azalea gardens.

Hardy climbers. Very few of these are used when their quantity and variety is considered.

A garden of fine-leaved hardy plants.

Water gardens. There are many superb hardy water plants in the hands of a few connoisseurs which would be obtainable. This would be an entirely novel feature, and a very popular one. Also tropical water gardens with the wonderful variety of coloured Nymphæas and Nelumbiums.

Ferneries, hardy, cool, and stove.

Gardens of flowering shrubs and ornamental trees. The flowering shrubs are in such vast quantity ; and yet only a few, and those not often the best, are seen in our English shrubberies.

Plants for the decoration of rooms and houses both from London and Paris growers. There are plants not known in Covent Garden which are eminently suited for this purpose. The mode the Japanese adopt for household decoration would be very novel and instructive.

A tropical garden with flowering trees from Chatsworth, Kew, and other great conservatories, Orchids growing on the tree stems, undergrowth of Lianas and Ferns.

Orchids shown in various ways ; all flowering hot-house and cool-house plants.

Lily gardens, such as could be exhibited by Mr. G. F. Wilson and other enthusiasts in this special branch ; also gardens of beautiful families of plants.

Winter gardens, conservatories, improved hot and greenhouses, but all furnished.

Fruit gardens on various systems, both home and Continental.

An orangery. At Margam there are Orange trees in tubs centuries old, and many other movable trees in all parts of the country.

Flower markets, such as those in Paris.

Small and well-arranged fruit and vegetable markets, such as are required in various parts of London.

The great flower shows of the year to be held here, Daffodils in their turn, Tulips, Rhododendrons, Roses, and so forth.

Gardens illustrating the cultures of the great nurserymen of Europe and America ; as, for example, the Gladioli of Souchet, the trees of Simon Louis, the special cultures of Vilmoren and Andrieux, the Camellias of Rovelli, the fine-leaved plants of Truffaut, the Oleanders of the Paris nurserymen, the Roses of England and France, the fruits of America, the plants of Belgium, and the evergreens of Britain.

Collections of fruits and vegetables from various countries.

Restaurants in which garden products could be obtained, as they never are in ordinary restaurants, and in which the various excellent ways by which garden and cereal products are cooked in other countries could be shown.

In the Scilly Isles, Cornwall, and west of Ireland there are many fine plants which have never been seen, except in a meagre condition, in England, such as *Phlœasias*, *Zenobias*, or *Embothriums*.

Window gardens and gardening on house-tops.

We beg to propose that the following persons, among many others, be asked for their assistance :—

Rev. Canon Hole
Rev. Canon Ellacombe
Col. Stuart Wortley
Rev. H. Ewbank
Professor Foster
Captain Nelson
Mr. Archer Hind
Sir C. Strickland
Dr. Masters
Mr. Kingsmill
Mr. George Maw
Rev. Wolley Dod
Mr. Gumbleton
Mr. C. Ingram
Mr. Brockbank

Mr. Burbidge
Mr. Harvey
Mr. Poe
Miss Jekyll
Mr. Whitehead
Mr. Krelage
Mr. H. J. Elwes
Mr. Mangles
Mr. G. F. Wilson
Mr. Baker, of Heavitree
Mr. J. Stevens
Mr. Loder
Mr. E. H. Woodall
Mr. Bateman

This scheme is, so far, only the proposal of the three undersigned—

A. F. BARRON,
WILLIAM ROBINSON,
FRANK MILES.

* * In giving place to this, we believe that such an exhibition, properly organised, would be delightful in itself and help in the right way gardening generally ; but it is well to say here that anything like the management illustrated in the present Health Exhibition could do little good to horticulture. As an example, let us glance at the very important department of cookery, in a health exhibition of first importance. From some experiments we have made in the "National" Cookery Department, we think that department the thinnest imposition that has ever assumed the dignity of "national." It is announced at a stall in the grounds that "all" the soups of the National Cookery Department are made from some foreign canned stuff ! This in itself is not encouraging, considering the frequent notices we read of deaths from canned meat, fish, and vegetables. That in a "national" cookery house, held in the capital of

beef-eating Britons, the soups should be made from such material is a sufficient illustration of the view the managers take of their responsibility as teachers of cookery—*national*, too, forsooth !

The usual British mistake of paying no attention to the waiting began the misery. An over-worked woman trying to cover three times the amount of table which she should in fairness have to wait upon ; an evening paper was nearly got through before the soup was brought. The poorest forms of vegetarian soups were rich and delicate in flavour compared with this. Then, after a weary interval, came a bit of meat and a spoonful of Potatoes. On enquiring for other vegetables, the diner was informed none were allowed. But the rash experimenter replied, "I am willing to pay extra if you can bring me any." "Oh, we never have any here," said the flying maid.

In this show one of the best opportunities of teaching much useful information about cookery has been wholly lost. It would have been easy to persons with the power and influence of the officials here to secure good representative cooks from each country in Europe. The sway which third-rate French cookery has now in various countries is a misfortune alike for health and cookery. Good English cookery has in some ways distinct advantages, and there are various countries in Europe where the art of making wholesome and excellent food out of simple inexpensive materials is well carried out, as in, say, the Italian treatment of the many forms of macaroni and of rice, and the excellent and peculiar Dutch way of dealing with vegetables and fruits. It would be well if our people learnt some of these things, and the true way is through cooks of each country. We might have had a middle-class French cook, not simply the *table d'hôte* or restaurant cook, but the true country French cook—the best of his race. We might also have had Italian cookery illustrated—and the Italians are excellent cooks—and the German and the Dutch, instead of which all is thrown in the hands of one well-known restaurant firm, and thus we get the common Crystal Palace or Alexandra Park fare, aided by our precious National School of Cookery and its rubbish. If the question of price be urged in extenuation of the badness and meanness of the cookery in this school, we suppose this "national" department is responsible for fixing the price as well as for the rest of the management. There are many thousands willing to pay a fair price and such as they must give elsewhere in this not very economical metropolis. Why do anything at all in this most important matter if not as well, say, as one could get it in a third-rate City or Strand restaurant urging no pretensions for our instruction, "national" or individual ? We see some good names in connection with the cookery department, including that of Sir Henry Thompson, who assuredly knows what good cookery ought to be, and we cannot believe the gentlemen whose names are thus used have been allowed to have any direction in the matter.

Now, the same mode of "directing" a garden exhibition would certainly have equally miserable results. We, who have never had any connection with such official undertakings, and never shall have any, may perhaps say so much in the interest of the subjects themselves, reserving our usual freedom of action (and illustration), in case that gardening should come in for any such treatment at South Kensington as the (in relation to health) still more important subject of cookery has this year received. We shall be happy to insert any comments our readers may wish to make on the above suggestion for a garden as distinct from a mere flower exhibition.—Ed.

Purple Berberis.—The purple-leaved variety of the common Barberry is a very desirable deep-tinted shrub, especially when in a sunny spot, as then not only the foliage, but the young shoots are of a deep purple colour. When standing in the foreground of a mass of the common kind, as observed by me the other day, it appeared unusually

conspicuous, owing to the light green of its surroundings. This Barberry can be increased to almost any extent by means of suckers, which are produced freely.—W. T.

TREES AND SHRUBS.

THE PLANER TREE AND THE ZELKOUAS. IN THE GARDEN of October 27 last there is an interesting article on these trees by Mr. George Nicholson, of the Royal Gardens at Kew, and as the editor asks for information concerning any living trees of the same kind other than those referred to, I beg to call attention to a remarkable tree at Wardour Castle, near Tisbury, in Wiltshire, the seat of Lord Arundell of Wardour, which, in spite of some doubt, I take to be the *Planera aquatica*, which has passed under the name of *P. Gmelini* and other synonyms.

The tree, which is still in full vigour, grows close to the south angle of the old castle, which is distant about half-a-mile from the modern mansion, and it springs from the ground in three distinct masses, two of which at once separate into four large stems, and the third into five, and all these stems again spread into numerous branches, but the three masses undoubtedly form one tree, and this has a total circumference, close to the ground, where the girth is the smallest, of 38 feet 5 inches. The front and back of the base of the tree are nearly flat, and the ends only are rounded, and the long axis from end to end is about 17 feet, and the height of the tree at least 70 feet. The bark is smooth, like that of the Beech, but rather darker in colour; the tree throws up suckers from the horizontal roots, but has not been known to flower; and it is stated by the gardener that the wood, when green, sinks in water, and to this circumstance is probably due the name of "iron wool," by which the tree seems always to have been known at Wardour. The wood of the *Planera*, I should add, is described by Spach as "ponderosum."

The geological formations in the neighbourhood consist of the Portland beds of the upper oolite (to which belong the adjacent Chilmark quarries, which furnished the stone of Salisbury Cathedral) and of chalk, gault, and upper greensand of the upper cretaceous system; and the tree probably grows in the disintegrated sand of the upper greensand series. The sand is fairly moist, and there is a large pond at a slight distance from the old castle.

It may be mentioned that the timber at Wardour is very fine, the Oaks, Tulip trees, Cedars, and Canada Hemlock Spruce attaining a considerable size, and many Silver Firs having a girth of 14 feet.

And now comes the question as to whether the tree is the *Planera aquatica* or the *Zelkova crenata*. A spray lately brought from Wardour was taken by me to the botanical department of the British Museum at South Kensington, and compared by Messrs. Britten and Ridley, of that department, with a spray from Ohio of the *P. aquatica* in the herbarium there, which formed part of the collections of Thomas Nuttall,* and

* Thomas Nuttall was an English botanist, who travelled extensively, and resided for many years in North America, and was the author of "The Genera of North American Plants, and a Catalogue of the Species to the Year 1817" (Philadelphia, 1818, 2 vols., 8vo), and the work contains a short notice of the *P. aquatica*, though it was not quoted in Mr. Nicholson's paper. He was also the author of a supplement to F. A. Michaux's "North American Flora," and which supplement was published in Philadelphia in 3 vols. in 1842-9.

was named and localised by him, and the two sprays were considered to correspond; and in confirmation of that opinion I should mention that the tradition at Wardour is that the tree there was sent, when quite young, from North America as a present from Cecil Calvert, the second Lord Baltimore, the founder of Maryland, to the second Lord Arundell of Wardour, whose sister he married. The exact date of the transmission of the tree is not known, but the colony of Maryland was founded by the second Lord Baltimore under a royal grant dated in June, 1632, and his wife died in May, 1649, at the age of 34. It is doubtful, as I must admit, whether the second Lord Baltimore was ever in the colony, but, as it was administered by a member of his family, the circumstance cannot affect the tradition, which is confirmed not only by the present Lord Arundell of Wardour, who was born in 1831, but also by his cousin, Sir Frederick A. Weld, the present governor of the Straits Settlements, who was born in 1823, and who, when a boy, spent much of his time at Wardour.

On the other hand, a second spray was compared at the Kew herbarium by Messrs. Oliver and Nicholson with dried specimens of the *Planera* and *Zelkova crenata*, and declared to belong to the latter, and it certainly did not correspond with the Kew specimen of the *Planera*, which was less crenate, while the Wardour tree undoubtedly agrees in foliage with the living *Z. crenata* adjoining the herbarium, and with the general description of the tree, which attains a much larger size than the *Planera*.

At the same time it must be remembered that the two trees so closely resemble each other, that the *Z. crenata* was treated as a variety of the *Planera* until it was separated from it by F. A. Michaux* in 1830; that the foliage of the *Planera* may slightly vary in different specimens, and that the tree, under favourable conditions, may attain a larger size in a new locality than in its native site, while the family tradition is strongly in favour of the Wardour tree being a *Planera*.

In regard to this tradition, I would remark that Sir F. Weld's evidence may be considered as going back to about 1840, while, according to Loudon, the *Z. crenata* was only introduced into England and planted at Kew and Syon in 1760 (the same year in which, according to F. A. Michaux, it was introduced into France). Now, if the Wardour tree, assuming it to be the *Z. crenata*, was also planted in 1760, it would in 1840 have been only eighty years old, and it would appear highly improbable that the idea of its importation from America in about 1640 should have originated in 1840 with regard to a tree then only eighty years old. It seems to me far more likely that the tree was an old and large one in 1840, and that it is in fact the *Planera*, and was sent from America in accordance with the tradition. It has, moreover, far more the appearance of an age of 240 years than of half that period.

We do not appear to have any description of the general appearance of the *Planera* as growing in America or any drawing, beyond that of a spray, and the non-production of flowers on the Wardour tree is much to be regretted. It may be

* F. A. Michaux's paper was read before the Paris Académie des Sciences on December 30, 1830, but was not printed in its "Mémoires," but as a separate pamphlet only. It is singular that Spach, in his "Note sur les *Planera*" of 1841, makes no mention of Michaux's paper, but treats himself as the author of the separation of the two trees, and of the new name of *Zelkova*, or rather *Zelkova*, as it is called by him.

hoped, however, that the attention now, for the first time, drawn to it may lead to a sure identification.

A photograph has lately been made of the tree, with a separate one of its lower portion, by Mr. Owen, a photographer at Salisbury, and copies have been left by me at Kew, the botanical department of the British Museum, and the Linnean Society, and Mr. Owen will doubtless be happy to supply copies on application. In order to furnish a scale on the photograph itself a 6-foot rod was placed against the tree, and, as it in no way detracts from the artistic effect, I hope that the plan may be adopted in all photographs of trees. Unfortunately, the Wardour tree is much shaded by others, so that the photograph is not so distinct as I had hoped. WINSLOW JONES.

Junior Athenæum Club.

* * We hope in some future issue to give an engraving of this very interesting tree.—ED.

Syringa Emodi.—This Himalayan Lilac is additionally valuable owing to its flowering late in the season. It forms a large stout-growing bush or small tree, the flowers of which are white or sometimes tinged with lilac, and borne in erect panicles. A plant studded with these spikes of blossoms is very ornamental. They are also strongly scented—indeed, too much so for close acquaintance, but at a distance the odour is not unpleasant. It thrives as well as the common kind in ordinary garden soil, and is quite hardy.—T.

The blue Spruce.—European tree lovers seem to have lately given the name blue Spruce to the *Abies pungens* of the Rocky Mountains. This tree is unfortunate in its names. At first it was supposed to be *Abies Menziesi*. When doubts arose as to its identity with the Pacific coast species of that name, it became *Abies Menziesi Parryana*—that is, a mere variety of *Menziesi*. Subsequently Dr. Engelmann regarded its differences wide enough to elevate it to the rank of a species, and it became *Abies pungens*. Prof. Parlatores does not regard the differences between *Pinus* and *Abies* worth generic distinction. With him they are all *Pinus*. As the Table Mountain Pine is *Pinus pungens* under the law of priority, a botanist who follows Parlatores will insist on giving our friend from Colorado a new name. Now as to its common name "blue Spruce," *Abies Engelmanni* of the same region and many other *Abies* are just as "blue" as this is, and confusion will certainly arise from its name. Worse than all, a variety of *Abies nigra* has been known for a hundred years or so in European gardens as *Abies coerulea*, which has been translated "blue Spruce."—*Gardeners' Monthly*.

The Weeping Beeches.—It may not be generally known that there are two thoroughly distinct varieties of the common Beech, very different in size and habit, and yet both very desirable trees. One forms a most picturesque tree, generally of very bold, irregular outlines. There is a very noble specimen of this form in the Knap Hill Nursery. In many places on the Continent, notably in some of the old gardens in Holland and Belgium, very fine examples exist. One of the most noteworthy is a specimen in the Botanic Gardens at Leyden. At 5 feet from the ground the trunk of this tree is of such a thickness, that a man with outstretched arms can barely clasp it. At Meynell Langley, near Derby, there is a still finer tree; the trunk at 4 feet from the ground was 9 feet in circumference some seven years ago; the diameter of the branches 90 feet north and south, 74 feet east and west, thus giving a circumference of about 240 feet. The second form of the Weeping Beech to which I have alluded is more fitted for covering arbours, rustic seats, &c.; it grows somewhat like an umbrella in shape, and neither attains the size nor assumes the boldly picturesque and irregular aspect of the other.—G.

The Lentiscus-leaved Ash.—*Fraxinus lentiscifolia*, although introduced to this country a century and three-quarters ago, is by no means a common tree in gardens, although it is certainly one of the most elegant of all the Ashes. A few years ago I was agreeably surprised to find a good sized specimen of it in a garden close to a large cotton factory in a northern manufacturing town, and it seemed to suffer less from the proximity of the forest of huge chimneys in its immediate vicinity than a host of commoner trees, native and introduced. It is a native of Syria, and attains a height of from 30 feet to 50 feet. A weeping form is also in cultivation; this has slender pendulous branches, and is one of the most elegant of weeping trees. *F. lentiscifolia* is sometimes met with under the names of *F. xanthophylla*, *F. tamariscifolia*, and *F. oxyphylla*, &c.—N.

The Washington Thorn.—This is the English name given by Dr. Asa Gray in his "Manual of the Botany of the Northern United States" for *Crategus cordata*, and it is used here in preference to Loudon's one—the Heart-shaped-leaved Thorn. It is one of the most distinct and handsome of the Thorns, and is, besides, perhaps the latest of all to bloom. At the present time, after nearly all the other species are past, good-sized trees are now in full flower at Kew. The broadly ovate or triangular somewhat heart-shaped leaves are of a deep shining green; the small scarlet fruits ripen in October. It is a native of Virginia, Kentucky, &c., and the trunk attains a height of from 15 feet to 25 feet. Although long ago introduced to British gardens (Loudon gives the date of its introduction to this country as 1738), it is far too seldom met with in cultivation. The attention of planters, however, only requires to be called to this handsome little hardy tree to ensure a due recognition of its merits.—G.

***Calycanthus floridus* (Constant Reader).**—The flowers sent by you are those of the Carolina Allspice (*Calycanthus floridus*), an old and well-known dwarf hardy shrub. Any nurseryman ought to be able to supply it, as although it cannot be propagated by means of cuttings, nor do seeds of it ripen in this country, yet it is readily increased by layering the shoots in the way usually practised for the majority of plants of a similar character. There are few gardens where a shrubbery exists in which this plant is not included, its hardiness, accommodating nature, and the sweet odour of its purplish brown flowers making it in every way a suitable subject for the front row in a border of shrubs, and even as a dwarf specimen shrub for standing isolated on the outside of lawns, &c. It flowers from spring to midsummer. Perhaps if it could choose its own position, this plant and its two relatives, *C. occidentalis* and *C. lividus*, would prefer a low, moist situation where a little shade would be available during bright weather in summer. Notwithstanding this preference for moisture and a little shade, the *Calycanthuses* will grow in almost any soil and position, the one golden rule to observe in respect to their health being to let them alone when once they are established, as they do not like to be disturbed at the roots. *C. floridus* is a shrub of 4 feet in height, and bears sweet-scented flowers of rather leathery texture and about 1½ inches across. *C. occidentalis* is larger in all its parts, and *C. lividus* is like the first mentioned, except that its flowers are yellowish green. The generic name refers to the character of the flowers, in which the calyx, instead of being green, is exactly similar to the petals both in form and colour, the two whorls combining to make up the almost double flowers which belong to the *Calycanthus*. The vernacular name, Carolina Allspice, has been given to *C. floridus* by the North Americans, in whose country it and its brethren are native. The wood, roots, and leaves when bruised have a camphor-like smell, and the aroma of the bark has caused it to be used as a substitute for Cinamon. The flowers have a sweet Quince-like odour. It is noteworthy that the only nearly related plant to the North American *Calycanthuses* is the *Chimonanthus fragrans* of Japan, and these two genera, which comprise in all four species, are

the only plants included in the natural order Calycanthaceæ. In nurserymen's catalogues numerous names for *Calycanthuses* may be met with, such as *C. macrophyllus*, *C. asplenifolius*, *C. ovatus*, &c., but these are merely slightly varying forms of one or other of the species above mentioned.—B.

FLOWER GARDEN.

EAST LOTHIAN STOCKS.

AMONGST Stocks for spring flowering none are better than these. They are fairly hardy, and when planted in good soil flower in great profusion and continue to do so for many weeks. A peculiar feature belonging to this class of Stocks is that as soon as the centre spike begins to fade the side branches extend with greater vigour than before, and make even a greater display than the first flowers. There are three distinct colours of this Stock which come remarkably true and produce a good percentage of double flowers, viz., white, purple, and scarlet, the last being very bright. For flowering next spring the seed should be sown this month. I like to sow in the open in a well-prepared piece of ground, taking care to make the surface rather fine for the reception of the seed. Drills are then made by pressing the angles of a square rod into the soil, thus securing a uniform depth. A drill as ordinarily understood would be too deep; a depression made a quarter of an inch deep is all that is required. As soon as sown the seed should be covered with finely sifted soil, and if dry it should be watered. In dry weather it is best to shade the seed bed with a few evergreen branches, a practice which not only saves watering, but keeps the soil moist about the seeds, so that they vegetate quicker than in a medium that is sometimes wet and sometimes dry. If seeded thinly, there will be no necessity to move the plants until they are large enough to go out to where they are to flower. They are excellent subjects for lines or masses. To be effective in mixed borders, they should be put in clumps of from seven to nine plants according to the width of the border. In whatever position they are planted they should, however, stand 9 inches apart each way; if nearer to each other, the flower-spikes will be weak. In order to secure a good bloom, they ought to be in the places in which they are to flower by the middle of October. I find that here in Somerset I lose more plants during winter from damp than from frost, and to obviate this I have to sprinkle some dry earth between the plants about twice during the winter. Early in spring I take advantage of the first few dry days to move the surface soil with a small hoe. This admits air more freely, and tends to keep the surface drier than it otherwise would be.

STOCKS of this class are also admirable subjects for supplying cut flowers during autumn and winter, when they can be properly accommodated. For this purpose the seed should be sown in the open early in April, and as soon as the plants are large enough to handle they should be transplanted, in order that they may be kept short-jointed. To effect this, the most suitable conditions are a moderately rich soil and plenty of room between the plants. About the beginning of June they should be large enough to move. If the weather should be very dry it may be necessary to water them a few times in order to get them established, but when they have well taken hold of the soil they will give no further trouble during the summer. In September, whether the summer has been favourable to good growth or not, they should be taken up and potted. If strong and showing flower take them up early in the month, but if not fairly vigorous it will be better to wait another three weeks in order to give them time to gain more strength. They should be taken up with as little injury as possible to the roots. The strongest may be put in 7-inch pots, but a size less will serve for the greater number of them. As soon as potted shut them up in a close frame or pit. Keep the soil in the pots fairly moist, and damp the leaves once a day with the syringe. At the end of a week give a little air, and gradually increase

it as they get established. In a warm brick pit they will continue to flower all the winter if there is an absence of long spells of cold weather, but the best place for them is an airy shelf in a house that receives a little assistance from fire-heat to keep up the temperature in severe weather.

J. C. C.

NOTES ON HARDY FLOWERS.

DURING the recent hot, dry weather one of the freshest and most pleasing objects here was a neglected bed, one side of which was edged with *Festuca glauca*, the grass of which was finely coloured and each clump well flowered. *Oxalis Valdiviana*, self-sown, formed a golden sheet round a heap of *Mimulus cardinalis*, the latter quite 3 feet high and well flowered. A 2-foot patch of White Cup (*Nierembergia rivularis*) has been weeded clear of the *Oxalis*, and its cups, almost set in the earth, but not lacking foliage to keep them clean, have become beautifully mixed with the pretty dusky *Acæna Novæ-Zelandiæ*—so much like a *Selaginella*; then, as if to show us how to plant beds and not to overdo them with the stronger colours, one finely-flowered seedling of the charming blue Flax (*Linum perenne*) has established itself at one corner. There is not the least bit of art in beds of this kind; in fact they are the outcome of neglect, yet they give us all the pleasure which our gardens are intended to give, and it requires some courage to pull them to pieces and set them in order. As in beds of the same form and quality of soil some rather unusual things for our Yorkshire climate are growing, I may state that they are raised 4 inches or 5 inches, and the *Festuca* proves a capital plant for keeping up the sides and imparting a trimness to them. The soil is rich, rather dark coloured, and also very light. Some four years ago *Asparagus* was growing on the site, and besides the richness from manure there are likely yet to be considerable saline properties in it. *Aciphylla squarrosa*, various *Oxalises*, a few *Ixias*, *Veronica Traversi*, *Saxifraga Stracheyi*, *Lithospermum prostratum*, *Tritoma*, *Libertia*, *Jaborosa*, and *Ivesia unguiculata* all succeed under these conditions, but *Andromedas*, *Menziesias*, and *Onosma tauricum* refuse to grow.

PRIMULA SCOTICA for the past two or three weeks, planted in pans in scores together rather close, has been exquisite. I find it in no manner particular as regards shade; in fact, the shallow pans in which it is growing have been fully exposed to the midday sun, and the position one where the plants had to contend with more than an ordinary amount of drying currents. The bog-loving *P. farinosa* has done equally well under similar treatment. With their roots in peat, loam, and sand, topped with grit, and a daily drench given in dry weather, they need nothing more. The more sunshine, the more water, and the more progress.

SEDUM FARINOSUM is worth growing (very distinct from *glaucum*). It is a striking rock plant, keeping close to the ground, and bearing an abundance of white flowers; though when closely examined it is seen to be a rather coarser species than *brevifolium*, it is in effect quite as good for the rockery, perhaps better, for it is freer in flowering and much hardier. It is a truly pleasing *Stoncrop*, and the large quantity of bloom which it bears gives off a wholesome scent like that of a rick-yard in harvest time.

SEMPERVIVUMS have had a good time during the sunny weather. They have both flowered well and shown character in their foliage, the tints vieing with those of the flowers. A rather funny and interesting discovery was made a short time since. Five kinds of the webbed or tomentose class are grown here, and, being desirable sorts, have been increased until they made quite a show. It was noticed that all the downy material from some of the rosettes had disappeared, and that the latter were sometimes displaced. Suspicion fell on a pair of robins and a pair of wrens, both nesting near the Houseleeks; at last the wrens were seen picking the fleece from a 6-inch pot of *S. Lageri*. Could they be using it for lining their nest, or was it mischief?

SILENE ELIZABETHÆ has behaved handsomely this year. I had come to consider this about one of the most fickle amongst all the alpinæ which I grow. I have had more than one plant, and for four or five years could scarcely get a flower. It was carefully lifted from place to place until at last it was set in a bed (well raised) of loam, lightened with leaf-mould, and in the full sunshine. A little plant with two weak crowns made fine growth, and has had half-a-dozen flowers—large, beautiful, and lasting; there are now on it some fine pods of seed. So, after all, there may be nothing difficult about its culture, but I feel pretty confident that it must have perfect exposure.

SOME SERAPIAS, notably neglecta, are now in bloom. The roots were only received last year from Italy; therefore they have not been fully tested. We shall see what kind of new roots they form—if they are equal or not to those imported. It may be said that the foliage and flowers look healthy. The tubers or knobs were potted in the dusty material collected from a sandstone road. For a time (two months) they were kept quite dry, in order that if possible they might be brought into accordance with our later season. As cold weather came on they were plunged in the open in coal ashes, and in that position they are now flowering. Last year I wrote about some

DAHLIAS which were left out all the winter, and said I should try more. I have done so, and though the shoots were late in appearing, since they did appear they have made remarkable progress. They are much superior to the best young plants I have seen. The numerous shoots are nearly 2 feet high, and possess great substance. All that was done consisted in cutting off the tops level with the earth about a week after the frosts had stopped their progress, and two or three shovelfuls of fine coal ashes were heaped over them. I do not wish to hint that the Dahlia is hardy, but if in this way labour can be saved and nothing of much value risked, it may sometimes be useful to practice it. I ought to add that my soil is rather light loam where I grow the Dahlias, and the site thoroughly drained. J. WOOD.

Woodville, Kirkstall, Yorks.

WEEDS IN THE WILD GARDEN.

At this time of the year many of our country friends allow the weeds to have their own way to an alarming extent. It is surprising how near the windows of fine houses one sees meadows of rank Nettles, Mercury, and other ill-smelling and obnoxious weeds. We have, perhaps, been instrumental in inducing many to devote a little attention to wild gardening, and we regret to see some of these persons have earned a lecture on weeds. The garden, so prettily occupied by Primroses, Snowdrops, Bluebells, and various spring flowers, is, in many cases, allowed to become villainous with Nettles and their friends as soon as the summer growth comes on. The foolish ideas people have about weeds are to blame for this. It is supposed that nothing can be done with the weeds except in the winter, when we can "get at their roots," and no sufficient attention is bestowed on destroying the tops. An ordinary crop with weeds one may hoe, but fouler weeds in the shrubberies are apparently not so easily dealt with, and therefore they are allowed to rob both flower and tree at their will, and make the ground dry and exhausted. The labour of removing them, however, is anything but formidable if they are attacked in the right way, and one good way is with an old scythe which will mow them down to the bottom, and in midsummer, too, in all their pride of growth. It is surprising how much may be cleared away by a man with a scythe in a few hours. We speak now of shrubberies rankly overgrown with weeds. We lately had to deal with one of such in which early Primroses and many pretty flowers were withering in the ground beneath the weeds. The foliage of the spring flowers being mostly matured, it was possible to cut the rank growth down without touching them. In many cases they had withered quite so that if

they had been cut by the scythe not the least injury would have happened to them. Where plants of fine summer growth, like Ferns, grow, they are easily avoided; and here a little picking or careful slashing with a long billhook will do the work. With one or two years' attention of this sort the gross weeds must get so weak that very little attention would afterwards be required. Cutting down in autumn when they have perfected their growth is almost useless, and digging out the roots almost futile if the root buds are allowed to get strong. But plants cut down in their full growth and before they have seeded make feeble root provision for the following year, and are then very much more easily dealt with at the root. But whatever we do in winter we should never fail to cut down the weeds without mercy in summer, where there is the possibility of the plant seeding, as well as its power of laying up sap and root for another year. What seems a hopeless task is in reality a very easy and pleasant one; for some enjoy sweeping down these armies of ill-smelling weeds so quickly as they may be cut down by a scythe.

The plan should be just the same for the ground which has nothing in it, but which is intended for planting, as for that occupied by wild flowers. In case the ground is intended for planting, the sooner after the weeds are cut down it is trenched up the better, as then the double attack both on tops and roots will go very far towards their total destruction. The spaces in this last case should be well dug or trenched and weeds deeply buried, the ground being kept open and free until autumn, when it may be planted with whatever is thought most suitable for it. The ground containing flowers may perhaps require a second going over in the autumn. Some strong growing plants, when fully established, keep the weeds away, or nearly so, reducing the labour in this respect to almost nothing. But at first, in making a wild garden, a little constant attention is necessary in fighting against the weeds. It is not only that some of our common weeds rob the plants, but many of them smell most offensively. They prevent the free flow of air and the wholesomeness of the spot, and, in short, make the wild garden the very opposite of what it might be as a pleasant retreat.—*Field.*

ECHEVERIA SECUNDA GLAUCA IN BLOOM.

WHAT a mistake it is to destroy the flower-stems of this succulent, and grow it for the sake of its foliage alone. It is really one of the prettiest and most distinct of flowering plants, and those who destroy the blooms deprive themselves of a large amount of enjoyment. We have two rows of it bordering a path 60 feet in length, and everyone who sees it admires the show of bright colour made by its flowers. Each plant carries some four flower-spikes, so that on the thickly-set plants they form a serried line, not too regular, for the spikes branch out in different directions. Now that the Box edging has become green, the contrast between its lovely verdure and the rich orange-scarlet of the Echeverias is both striking and pleasing. To obtain a good display of bloom, the plants must be got out early; the end or, indeed, the beginning of May is too late. They must be planted quite by the middle of April, and then they get good root-hold by the time when they begin to throw up their flower-stems, which then push up strongly. A good watering occasionally, if very dry, in May and a little manure of some kind help them. Ours had a top-dressing of Clay's Fertiliser when planted, and they seem to have enjoyed it. Many, I think, take more pains in wintering Echeverias than is needful. Experience has taught that they keep just as well, or better, without earth than with it. Ours are shaken clear of it, and laid in boxes in a draughty shed, and they look all right in spring and quickly come into growth. Those who may be short of glass accommodation and have shed room will find that they will keep well in such places, just covering in severe frosts and giving all the air possible in mild weather. By the middle of March they should be brought into the open air, as from that time a

mat or two thrown over them at night will quite guarantee their safety, and thus treated they will become very strong and hardy. I advise those who grow Echeverias for summer bedding to manage them in this way and grow them for bloom as well as for their foliage. I am sure that the result will give much satisfaction.

J. C. B.

A FEAST OF ENGLISH IRISES.

THESE have the best of the Spanish Irises in the size and striking character of their leaves and the boldness and height of their towering stems. Few plants are more truly in character or strikingly suggestive within sight or sound of water. In such positions the root-stocks run with a freedom and grow with a stoutness and vigour seldom found in common beds or borders. These Irises also go well with Ferns. A mass of rockwork or portion of a bank clothed with Ferns and Foxgloves, with groups of English Iris at its base, and the latter rising out of a pool or lake of water half clothed with a few Water Lilies and other aquatic plants, form a picture of life and beauty most difficult to equal—almost impossible to excel. The English Iris is by no means particular about soil or position, though it pays well for good culture and rich soil, as may readily be seen by comparing the size and colours of those grown in Belgium and Holland with the general run of those met with in English gardens. No doubt, as a rule, there is more variety on the Continent, but even the same sorts are seldom met with in the same perfection in this country. I have just had an opportunity of comparing flowers grown in Holland with others grown at home. The difference is very great indeed, though of course hardly any Iris can be more striking than the old Susiana, which has been exceptionally fine this season; but then the latter only thrives here and there, and in many gardens it actually refuses to grow. Possibly some of the darker strains among the fine collection sent may owe some of the richness and fullness of colouring to the addition of some of the black blood of this striking species, though it seldom, so far as I am aware, has ripened seeds in this country. The following are among the finer English Irises that I have been able to examine, and borders and beds of these would make not a few Orchids look poor indeed; and yet the Irises are perfectly hardy, so cheap as to be within reach of all, and anyone with a yard of ground may grow from one to half a dozen of them.

SELECT ENGLISH IRISES.—Rossignante, dark purple with golden veins; Paul Kruger, rich violet; elegans, pale violet; Garibaldi, pale blue, splashed with dark blue; Shirley Hibberd, white, streaked and tinged with mauve; Moore, very dark purple; La Grandesse, lilac, spotted and tinged with violet-red; Madame Van der Hoop, rich purple; Miss Patti, pale blue, streaked with darker purple; Amalia, pure white, tinged with mauve; Her Majesty, mauve, streaked and tinged with dark violet; Anna, pale mauve; Second Vice Roi, violet, tinged with dark; Regulus, pale blue, with very dark centre petals; Tamare, pale blue; La Fierze, rich blue, streaked with dark blue and white; Mont Blanc, pure white, very large and fine; D. T. Fish, pale violet with deeper centre; La Persigny, dark purple; Laurens Koster, soft mauve; Emicus, mauve and dark spotted; General Pell, dark mauve streaked with violet-red; Aurora, mauve and red; Rossini, large, rich dark blue; Castor, red and mauve; Blanchard, pure white, chaste, not so large as Mont Blanc; Leviathan, rich royal blue; Lord Canning, pale blue, with violet-red centre petals; L'Unique, pale blue, soft dark; Oratius, dark blue; Florida, pale blue with dark blue centre; Tilly, white streaked and spotted with red-mauve; Medusa, mauve, streaked with dark; Pyrene, dark mauve; Diana, white streaked with red-violet. From this meagre description it will be seen that the colours are sufficiently rich and varied. What the change and what would mostly be reckoned improvement in form is even more striking. The old ragged beauty of this free-and-easy Iris of the olden time has given

place to compact blooms a good deal like the *Eucharis amazonica* in form and character. While this may not add to the beauty of the Iris as a bed or border flower, it adds immensely to its usefulness for bouquet work and general decorative purposes, and in the near future it is probable that the English and other Irises may become as popular for decoration as the *Eucharis*, *Stephanotis*, *Bouvardia*, and *Orchids* are now. D. T. FISH.

Genista sagittalis.—This low-growing member of the Broom family is just at home in a sunny part of the rock garden, where it is now a mass of golden blossoms, and from the number of buds yet to open, it appears likely to continue in beauty for some time. Even when out of flower, the peculiarly winged branches, but sparsely furnished with leaves, have an uncommon appearance.—T.

Doronicum Clusii.—Under this name I received from a botanic garden the plant I noted last week (p. 19), but the Rev. C. Wolley Dod, a well-known authority on hardy plants, writes to say that he considers my plant to be *D. plantagineum* var. *excelsum*. It is to be found in certain catalogues and nurseries as *D. Clusii*, and lest any mistake should occur I think it well to acquaint your readers of this fact. The true *D. Clusii* is a dwarf plant of very different habit.—J. T. POË, *Riverston*.

Eremurus himalaicus.—This very handsome and perfectly hardy Indian *Asphodel* has bloomed very finely in my garden during the months of May and June, and was described in your columns at the time by my friend Mr. Smyth, to whom I am indebted for my plants, raised by him from seed sent to him from India by a friend some thirteen or fourteen years ago. The flower-stems were over 4 feet in height, and quite 2 feet of this was a solid column of pure white flowers, each about the size of a florin. I have just saved some good seed of this fine plant, and shall be happy to send some to any reader of THE GARDEN who likes to send me a stamped and addressed envelope.—W. E. GUMBLETON, *Belgrove, Queens-town, Ireland*.

Iris reticulata, so often mentioned with praise in THE GARDEN early in the year, should now be lifted and replanted, that is if the plants have stood three years in the same place, as I find they are much improved by being removed and thinned out. Those desirous of possessing this charming *Iris* should procure it and plant it at once if possible. At any rate the planting of it should be completed in August. The dry, cool weather of last spring just suited it. We had it in flower from the 4th of February right on through March. I never saw it finer. The bed in which it is growing here is partially shaded, but I should add that the late Mr. J. G. Nelson always grew his plants of it in full sunshine; his soil at Aldborough was stronger and of a more retentive character than ours. He never trusted bulbous plants in the mixed herbaceous border, unless it was something that would increase rapidly, and that could take care of itself. On the contrary, he devoted a border or borders entirely to bulbs, and always planted them in lines 1 foot apart, and from 4 inches to 6 inches asunder in the rows. As he used to say, planted thus "they are easily kept clean, and one knows exactly where to find them," especially with a label in the front of each row.—WM. ALLAN, *Guntton*.

Lilies at Heatherbank, Weybridge.—Having been absent from my garden for three weeks, I have looked over my Lily beds, and send a few remarks on Mr. Wolley Dod's interesting article on Lilies (p. 28). I will begin with the one with which he ends, *L. Krameri*. I think with this Lily it is more a question of climate than anything else. Probably Edge Hall garden is too cold for it; both here and at Wisley it gives no trouble, blooms and increases in both shade and sun in many different soils. We have it both in loam and mixtures of peat; it seems to like both equally well. *L. candense* grows well with us in peat soil and likewise in mixtures with loam.

L. Szovitzianum has been very fine grown in loam; *L. testaceum* is now finer than we have ever had it before; *L. Parryi* has bloomed well; *L. giganteum* flowered at our cottage garden, but was not to compare with the splendid plants at Mr. McIntosh's, where this Lily seems quite at home. *L. pardalinum* is fine, but not equal to what I have seen at Mr. Wolley Dod's; *L. candidum* is good at our cottage garden, but not as fine as last year. I think that the April frosts weakened it. *L. auratum* suffered both from the April frosts and from the long drought—we cannot give artificial watering. The finest flower we have out is the blue Poppy, *Meconopsis Wallichii*. This is finer than I have ever seen it. Our best plant is more than 5 feet high on a loamy bank; the strength of growth appears to have developed its colour. We never had it so good a blue before. We have been planting recent gleanings from the Highlands, among them *Cornus suecica*, which my son found on a high hill; the flowers of this were very pretty. It is planted where *Cornus canadensis* is thriving, and I hope that we shall succeed with it.—GEORGE F. WILSON.

ZINC GARDEN LABELS.

KNOWING somewhat of the utter futility of wooden tallies in a large garden, I read Mr. W. H. Cullingford's remarks with much interest. I now wish to say that by far the most practical and



efficient zinc label I ever saw is that used by Mr. J. Clarke in the gardens at Wemyss Castle, Fife, N.B. It may be made of any convenient size required, and the shape may be varied according to taste, but the principle is that of a hairpin fixed to a visiting card. A piece of stout zinc or galvanised iron wire a foot in length is bent into a hairpin-like shape, and this is soldered to a bit of sheet zinc at the back. The name may be written either with lunar caustic pencil or with a solution of

nitrate of silver. Any handy man can make them, and they are not only slightly unobtrusive in colour, and efficient for their purpose, but also practically indestructible. F. W. B.
** This label resembles Mr. Ewbank's label figured in THE GARDEN some time ago, and which we here reproduce to show the form. The top of Mr. Ewbank's label is, however, wood; that of Mr. Clarke zinc.—ED.

NOTES OF THE WEEK.

THE Council of the Meteorological Society have issued a valuable work entitled "Rainfall Tables of the British Isles for 1866-80," compiled from the records of 366 stations, by Mr. G. J. Symons. In the preface it is said that these tables "comprise a more complete record of rainfall than has hitherto been given for any country during an equally long period." It is published by Stanford, Charing Cross.

Overdoing.—In the Edinburgh public gardens they have discovered that the giant Cow Parsnip is an effective plant, and therefore they have put it everywhere! from the little garden at Waverley Market to the further end of Prince's Street, in valley and on hill. By-and-by we may look for the extermination of the Scotch Thistle by a ten times more voracious plant—foul smelling into the bargain.

Carnations and Picotees.—These are now the flowers of the season, and next Tuesday the society specially devoted to their interests will hold its annual show of them in the conservatory at South Kensington. Those, however, who wish to make selections of the best sorts should see good collections of them growing and flowering in borders. There is no lack of these plants about London, but the largest and best displays of them are those in the Royal Nurseries at Slough, where Mr. Turner has no fewer than 8000 plants, that will be in flower during the next three weeks, and in the Royal Exotic Nursery, Chelsea. Particular interest attaches to Messrs. Veitch's collection, as it shows what can be done in the midst of a populous district. The border Carnations in Messrs. Veitch's nursery are unusually fine, special attention having been paid to raising new sorts.

PLANTS IN FLOWER.

A white *Water Lily* which has been sent to us by Mr. Kingsmill measures 8 inches across. The white *Water Lily* seems to vary in size a good deal.

Abelia triflora.—Mr. Gumbleton sends us a specimen of this handsome shrub, which he grows very successfully at Queenstown against an outside wall. The flowers, which are pinkish, are gathered in small clusters at the tips of the twigs, and are sweet-scented. There is a large bush of the same shrub against one of the walls at Kew, which is always an attractive object at this season.

Pelargonium Murrayanum.—Mr. Spinks sends us specimens of this favourite old *Pelargonium* still so much prized in old-fashioned gardens. The flowers are small and not so symmetrically shaped as florists like them to be, but they are produced numerously in clusters, and their colour, a soft mauve-pink, renders them very attractive. This *Pelargonium* is very floriferous, and flowers after most others are over.

Vanda Sanderiana.—The gigantic specimen of this new *Vanda* in the nurseries of Messrs. James Backhouse & Son, at York, is now developing no fewer than fourteen flower-spikes. This specimen forms a compact luxuriant mass about 18 inches high, with eight stems and eighty or ninety leaves, and when in full flower will afford such a sight as has seldom been seen in the way of *Orchids*.

Statice Suwarowi.—This new species does not appear to find much favour as yet among those who have tried it in this country. One of our correspondents writes as follows concerning it: "I send you specimens of this *Statice* to show how poor it is in colour. I have many well-grown plants of it, and all are of the same colour, and they must therefore go to the rubbish heap." There may be good and bad varieties of this plant, and perhaps readers who have grown it will give us their opinion regarding it.

Philadelphus microphyllus.—This is the tiniest Mock Orange we have yet seen. It is a North American shrub recently introduced, and Mr. Gumbleton sends us two or three little flower-sprays of it. It seems to be twiggy in growth. The leaves are very small, as also the white flowers, which are borne solitary at the tips of the branchlets. Mr. Gumbleton says the flowers are very sweet scented. It is interesting to have in the garden a Tom Thumb among *Syringas* as well as a giant, which the *P. grandiflorus* may be called.

Galtonia (Hyacinthus) princeps.—This resembles *G. candicans* in every respect except in the width of the leaves, which are narrower in *G. princeps*, and in the colour of the flowers, which are greenish white instead of the pure ivory white of *G. candicans*. *G. princeps* flowered at Kew in the Cape house last spring, and is now again in flower on a south border, where a collection of hardy ornamental and other bulbs is being formed. Besides the *Galtonia*, there are in flower on this border *Bravoa geminiflora*, *Hymenocallis Harrisiana*, *Crinum latifolium*, *C. capense*, and several other bulbous plants.

Lathyrus Drummondii.—I am glad to find Mr. R. Dean writing in favour of this uncommon coloured Everlasting Pea. I have never seen it growing in any nursery I have visited, with one exception, though it is to be found occasionally in catalogues. Everyone who has seen it this year in the garden here has been struck with its beauty, and various were the enquiries as to its name and where it could be procured. Last year I had the pleasure of distributing seed of it to a large number of applicants in reply to an offer made through THE GARDEN, and I shall be glad to do so again this season, when the seed is ripe, if any of your readers will send me an addressed and stamped envelope.—J. T. Peck, *Riverst n, Nenagh.*

Lilium philippinense.—The exceptionally long flower-tube of this beautiful Lily distinguishes it from some of the forms of *L. longiflorum*, one of which (*L. Harrisii*) we noted last week as being in flower at Kew, where several plants of the Philippine kind may now be seen in great beauty. In height of stem, width of foliage, and size of bulb there is a marked difference between this species and *L. longiflorum*; notwithstanding this, there are good reasons, both as regards the form and colour of the flowers and the general appearance of the whole plant, for classing it with the *longiflorum* group, which is confined to China and Japan, with the exception of *L. philippinense*, the native country of which is, as the name denotes, the Philippine Islands. *L. philippinense* bears flowers nearly 1 foot long and pure white; it thrives only in a warm greenhouse.

Dipladenia boliviensis.—An example of the floriferousness and beauty of this not very common stove climbing plant is afforded by a very fine specimen of it from Mr. Hans Niemand's nurseries at Edgbaston, where, we are told, a plant covers an area of 120 square feet under the roof of a house facing the south. The plant, which has been smothered with flowers for quite four months, seems likely to continue in bloom until September. The flowers measure about 2 inches across, are funnel-shaped, and pure white, except the centre, which is orange-yellow. The shining deep green foliage, too, sets off the flowers to advantage. The latter are extremely valuable in a cut state, and particularly useful for bouquets and wreaths. It is a plant that can, without hesitation, be recommended as a desirable and easily-grown stove climber.

Veronica chathamica.—A pretty New Zealand species, shrubby like other Veronics of the *V. speciosa* race, to which *chathamica* evidently belongs. The leaves are about an inch long, densely arranged on the branches, which are terminated by close conical clusters of small flowers, first mauve-purple and afterwards quite white. Some flowering twigs of this pretty little novelty have been sent to us by Mr. Gumbleton, from his garden at Belgrove, Queenstown. Mr. Gumbleton says it has a trailing habit and is quite distinct. Another pretty Veronica has also been sent us. This is *V. Girdwoodiana*, likewise a shrubby plant of erect growth. The leaves, which are narrow and small, are set thickly and crosswise on the twigs. The flowers are bright purple about as large as those of our common Speedwell (*V. Chamædrys*), and are profusely borne, so that even a small plant is attractive.

The Spanish Broom (*Spartium junceum*).—After midsummer this Broom commences to unfold its large golden blossoms, a succession of which is often kept up till autumn sets in. During the latter part of the summer it is one of the most ornamental of flowering shrubs, especially where planted in close proximity to masses of foliage which serve as a setting to the brightly coloured blossoms. This Broom succeeds well in almost any soil not too much saturated with moisture. It holds its own fairly well in hot and dry spots. I once saw it planted pretty freely among Rhododendrons, which it overtopped with its long flexible shoots, and after the Rhododendron blooms were over the masses of gold dotted here and there amongst the green leaves served to enliven the otherwise sombre appearance of the bank on

which both grew. This Broom ripens seeds in quantity, from which plants may readily be raised if sown in beds in the open ground.—W. T.

Plagiolirion Horsmani.—For the introduction of this new genus we are indebted to Mr. Horsman, in compliment to whom it has been named, and who has brought us examples of its pure white flowers. It is by no means so showy as *Eucharis amazonica* or *candida*, but it is, nevertheless, a very interesting plant, and good cultivation may yet improve it both in size and effectiveness. It is a native of the United States of Colombia. In bulb and foliage it resembles *Eucharis grandiflora*. The scape is erect and about 18 inches long, and the flowers are borne in a rather dense head, twenty-two flowers and buds being on that now before us. The flower-stalk, ovary, and tube are green, the narrow spreading segments of the perianth whitish and arranged in a fan-like manner—that is, five of them are almost upright, the other, along with the stamens, curving downwards. It flowers during the summer months, and the treatment usually given to *Eucharis* will doubtless suit it. Along with the *Plagiolirion* came very fine flowers of *Milla biflora* and a spike of a green-flowered *Eucomis*.

Kæmpferia Kirki.—This handsome Gingerwort, better known by the name of *Cienkowskia Kirki* (it having been placed amongst the *Kæmpferias* by the authors of the "General Plantarum"), is just now very attractive in the Begonia house at Kew, where several plants of it in pans and pots are flowering freely. The inconvenience caused by the alteration of the name is amply compensated by the removal of a very "hard" name from what is a really beautiful garden plant. Judging by the Kew plants, we should say the cultivation of *K. Kirki* is simple enough, all that is necessary being a long winter's rest for the Ginger-like tubers, and starting them into growth in spring in a warm house, using a light rich soil, and supplying them with plenty of water while they are making leaves and blooming. A coloured plate of this plant was given in THE GARDEN in 1881. In the stove at Kew there are several other species of *Kæmpferia* which are either remarkable for attractive leaf coloration, for pretty flowers, or for the economical properties belonging to their roots, which are purple outside and white within, and possess an aromatic fragrance.

Alstroemeria aurantiaca.—Mr. Spinks sends us from the Royal Nurseries, Edgbaston, some uncommonly fine flower-stems of *A. aurantiaca* and the variety *aurea*, the first having flowers of a rich reddish orange-yellow, the colour of *aurea* being clear yellow. "These flowers," says Mr. Spinks, "are cut from plants on a border on the south-west side of one of the houses 22 yards long by 3 feet wide. I planted them twelve months last March; they are now a mass of flowers, and for cutting nothing of the same colour can equal them. They last a very long time in good condition, the heavy rains not injuring them in the least." This is a plant that should be grown by everyone who has a warm sheltered border. It merely requires slight protection in winter with some loose litter, and in spring, just as the shoots appear, a good dressing of rotten manure. The result of this treatment is certainly a sight not soon to be forgotten at this time of year. In very cold inland districts this plant may require sheltering during winter, but we have met with it in many places growing in light soils, where it receives no protection whatever. It is one of the showiest of hardy perennials. It is the tender kinds, such as *A. pulchella* and others, that require such warm and sheltered places. No better place for these can be had than the foot of a south wall.

Pancratium maritimum.—The flowering of this plant (the Sea Daffodil) is of rare occurrence in this country, and we do not remember having seen or heard of its being in blossom in English gardens for many years until the other day, when we saw a plant of it in flower in the Cape house at Kew. *P. maritimum* is a native of the countries bordering the Mediterranean, and is found in greatest abundance where the sand is

warm and deep and in close proximity to the sea; in fact, we are inclined to believe that the salt has something to do with the health of this plant. Herbert's suggestion, viz., to plant the bulbs of *P. maritimum* in deep pots of coarse sand, and then to stand the pots on a hot flue in a warm, unshaded house, has been followed at Kew, a little salt having been mixed with the sand before planting. The scape on the Kew plant is about 15 inches long, and bears a head composed of eleven flowers and buds, which open two or three together and last for about two days. The flowers are Daffodil-like, the cup being rather ragged and deep for a *Pancratium*; they are dull white and green in colour. *P. maritimum*, *P. illyricum*, *P. carolinianum*, and *P. rotatum* (now a *Hymenocallis*) are hardly enough in this country if planted at the foot of a wall with a south aspect; but although *P. maritimum* grows well enough under such conditions, it will not produce flowers. Altogether there are now about a dozen species of *Pancratium*, all of which, with the above exceptions, are tropical and thrive only in a warm house. *P. speciosum* and *P. caribæum* are the best known of the tropical kinds, and both of these may now be seen in fine flowering condition in the Palm house at Kew.

Begonias and Gloxinias at Reading.

—For many years now Messrs. Sutton have had grand displays of these, but it may safely be averred that the display this season greatly excels that of any previous year. The rapid rate at which tuberous Begonias have attained to so high a state of perfection generally can have no better illustration than by a sight of the large stock now to be seen in the houses at Messrs. Sutton's seed grounds; the foliage is leathery and massive, and the flower-stems stout and well thrown up, whilst as regards size of flower, that of the major part is quite 4 inches across, and there are many larger than that, and yet perfect in form and substance, reminding one of the petals of a *Lapageria*. With respect to colours, there are primrose, pure white, flesh colour, rose, magenta, crimson, and deep scarlet—these last in abundance, but the two first—primrose and white—are evidently favoured colours. Named sorts are grown in limited quantities only, the great bulk being seedlings of last year, and not a whit behind—many better—than the named kinds; one therefore wonders why naming of certain varieties should continue, unless it be to land us in respect to Begonias—as we are already in regard to single Dahlias—in complete bewilderment, a remark also equally applicable to Gloxinias. These Messrs. Sutton have discontinued naming, and that they are justified in doing so the magnificent array of plants now in full blossom affords an excellent illustration. To say that in every particular they are quite equal to the Begonias is not unduly overrating their excellence. Why, there are hundreds of plants raised from seeds sown only last January that now have foliage entirely concealing the pots, mostly 5-inch size, and with from four to six flowers now open on each plant. All who can should go and see for themselves; they will receive a kindly welcome and may get a hint or two on other subjects besides Begonias and Gloxinias.—W. W.

A remarkable Fir tree.—The *Garten Zeitung* for January, 1884, describes and illustrates a very curious Fir tree now growing in a park at Sonderhausen. The tree is a large one, being upwards of 100 feet in height, the trunk some 10 feet in circumference, and said to be 179 years old. But it is not the age nor the dimensions which render this tree noteworthy, but an abnormal development of one of the main branches, which, much thicker than the rest, gives birth as it were to a second tree, which springing from it forms a veritable cone-shaped tree not less than 25 feet high and some 3 feet through. It is just as if one tree were growing on another, and naturally presents a very strange appearance. It is supposed that a wound made in the branch by a squirrel or an insect has caused a bud to develop which has produced this secondary tree.—J. C., *Byfleet.*

GARDEN IN THE HOUSE.

FLORAL DECORATIONS.

It is almost depressing to read the account of the arrangements of cut flowers at the evening fête in Regent's Park, so ably criticised in the leading article of *THE GARDEN* for July 5; it gave one a vivid picture of the dreary monotony, the stereotyped ugliness, and the vulgar display which prevailed. I have often visited these floral shows in the hope of meeting with something natural and harmonious, and again and again gone away in despair. The remarks of the writer of the paper in question on the "china-ware merchant, who seemed to regard flowers in quite a secondary light, as but a medium for the exhibition of his goods," was singularly telling. Then, again, as to flat mirrors. What a delusion to imagine they can ever faintly be supposed to imitate water! I have sometimes seen them adorned with little white china swans, though I am almost ashamed to mention such puerilities. The trumpet-shaped glass vases have been repeated *ad nauseam*. There was never any merit in the design, and if there had been, we have had far too much of them. It is fair to suppose (as the writer says) that "the

the year. Look at the hedges overgrown with "the wilding Rose" and "well-attired Woodbine" in full blossom. See that mass of Foxgloves of many shades, from crimson down to creamy-white, speckled with faint dashes of colour. How

peculiar to each flower. This once laid aside, you cannot replace it by any addition of Maiden-hair or other Ferns, beautiful as these are in themselves and useful as they may be to help to fill up what is lacking. I see this is alluded to in the

article to which I refer. The writer says: "If the foliage of the Irises had been used instead of the Grasses, a much better effect would have been the result." I will mention a few flowers which look lovely arranged with their own leaves. First the Christmas Rose, that pale child of winter whose fair presence comes to cheer us amid January's snows, itself spotless as they. There is no way to my mind of arranging this welcome gift of the new-born year like that of placing it in a bowl or vase interspersed with its own leaves. A few years ago a lovely picture hung on the walls of the Grosvenor Gallery in the winter exhibition. I forget the artist's name, but if he had been till then unknown to fame, he must ere this have achieved it. Here is the painting. A bank of Christmas Roses with their glossy leaves of bright green and russet-brown standing out against the background of a dull leaden sky and surrounded by new-fallen snow. I could not forget it for days. One may well imagine that after all poets and painters are Nature's best interpreters, and that their mission is to reveal her charms and explain her teaching to the heedless and common-place throng. After I had seen that picture I determined never to use any foliage but its own for the Christmas Rose.



stately they stand amid the tangle of broad Fern leaves and slender Grasses! Look at the pond in which many water plants and tall Reeds are faithfully mirrored, but whose reflections are broken and dispersed by the carpet of lovely Water Lilies, yellow and white, with their broad velvet leaves which spread over its unruffled surface. Consider, I pray, the flowers of the field, how they grow. Nature laughs at our poor faltering efforts, and shows how flowers ought to look. She arranges her decorations with no niggard hand, and deigns to tell us what lovely effects may be produced out of homely materials in the hands of a true artist. She says again and again: "Eschew formality, but cultivate grace. Let that grace be a copy—perhaps faint, but still in some sense a reflection—of my loveliness." It is related in classic story how a Titan once fought with Zeus. The struggle was long and unequal, but whenever in the conflict the mortal combatant touched the earth he conquered. In like manner we in our strenuous endeavour after the beautiful prevail whenever we bid adieu to conventional designs and formal plans and return to Nature. But from the general to particulars. One great fault in floral arrangements is the omission of the foliage

Violets and Primroses, again, are never so lovely as when enclosed in a framework of their beautiful leaves. It is almost a sacrilege to add anything else. Later on the "golden host of Daffodils" should, as a rule, have a background of their own slender foliage, attention being paid to the vase in which they are placed. Antique china jugs or some of the exquisite vases produced by the Worcester and Staffordshire manufactories are highly to be recommended. Glass is less suitable for a variety of reasons. What can be more effective than a posy of different kinds of Narcissi, with their own leaves, in a blue and white or dark green vase of old pattern? or a blue bowl of different-coloured Roses, with no other flowers? or Clematises of different shades, not broken off short, but gathered in long, graceful sprays? Mignonette and Sweet Peas look well together, and so do Foxgloves and Canterbury Bells, with their almost endless *nuances* of colour. These, by reason of the scantiness of their own leaves, should have a background of variegated Maple. Branches of Lime in flower or a piece or two of the Copper Beech, too, lend variety to a charming bouquet. When flowers may be suitably mixed, I would venture to suggest they should never be massed indiscriminately together, but placed with some regard to colour and style. For instance, where a mural decoration is required (vases with the wall as a background), support with large sprays of the proper foliage. All through the changing year this maxim applies. Do not separate the flower from its own surroundings. Nature has given to each its own peculiar foliage best calculated to heighten its charms. Do we know better than so consummate an artist?

With regard to large arrangements of flowers, the Berberis, the Portugal Laurel, and the common Laurel, with many others form a good background and likewise a charming contrast to the gay blossoms in front. The Hydrangea is most effective at this season. Two large sprays with leaves and a few crimson Roses fill a tolerably large

public are apt to regard these shows in the light of a school in which the best taste is displayed." Poor public, I grieve for you! But leave these vain shows, go out into the woodlands, and see how Nature arranges her decorations at this time of

the year. Look at the hedges overgrown with "the wilding Rose" and "well-attired Woodbine" in full blossom. See that mass of Foxgloves of many shades, from crimson down to creamy-white, speckled with faint dashes of colour. How

vase, together with the branches of *Berberis*. Time would fail me to enlarge on this subject. I can but throw out a few hints and leave the subject for a future paper. W. N.

HARD-GROWN PLANTS BEST.

WITH the greatly-increased demand for plants suitable for use in dwellings that has come about in recent years, there has naturally been a run on fine-leaved kinds; for although such as bear attractive flowers are not less prized than they used to be, still the bloom of most things is of short duration when the plants are subjected to the dry and often gas-impregnated atmosphere of a living room. Elegant forms of leaf plants, such as Palms and Ferns, will no doubt always be appreciated as they deserve to be, but in addition to this a certain amount of colour beyond that afforded by plants with green leaves is wanted, and this is secured by the use of those with variegated foliage, so far at least as to much reduce the number of the more fugative flowering kinds required. Unfortunately, most of the plants with brightly coloured leaves are species that require a considerable amount of artificial heat in order to grow them well, and on that account they do not keep in good condition so long in the cool, dry atmosphere of a house as they would if they were naturally able to thrive under cool treatment, yet the way in which even stove plants are able to bear such trying treatment as is unavoidable when thus used very much depends on how they have been grown previously.

The coloured-leaved *Dracænas*, of which the old *D. terminalis* may be taken as the most familiar representative, and which are so much employed for the purpose under notice, will not only live, but make growth in an ordinary living room during the warmer half of the year, provided the plants have previously received treatment such as to impart strength and solidity to their foliage, whilst such plants as *Cyperus alternifolius* variegatus, the variegated form of *Curculigo recurvata*, *Begonias* with variegated foliage, *Coleus*, *Acalypha*, *Pandanus variegatus* and *P. Veitchii*, *Panicum variegatum*, and *Crotons* will last for a considerable time; even *Caladiums*, notwithstanding their naturally soft leaves, will keep in presentable condition for two or three weeks in a room in summer when they have had suitable treatment beforehand. Than these no plants with which I am acquainted better serve to illustrate the difference that exists in the same kind of plants when grown in a way that enables them to bear up under hard usage as compared with the soft, flabby condition in which these plants are often seen through being grown in a manner conducive to such a state.

Those who are in the habit of seeing horticultural shows will have noticed that *Caladiums* often look the most uncomfortable of all plants in the show, drooping, after standing a few hours out of the place in which they have been grown, much as if they had been frozen. *Caladiums* are now being grown for Covent Garden Market, and the way in which the leaves keep up erect and crisp, even when exposed to a drying wind, would surprise those who continue to treat these and other plants of a like character under the old enfeebling conditions of bottom-heat, which, more than anything else, induces soft foliage, incapable of bearing the trying usage which plants are now required to undergo. The debility caused by this treatment is equally apparent in the flowers borne by plants so managed, which do not last half the time they would do were they to receive better treatment. The way in which soft-grown plants brought on in bottom-heat are now shunned by buyers in Covent Garden has resulted in the practice of thus virtually raising them being given up by the growers. T. RAINES.

Gladiolus The Bride.—Mr. Pettigrew, of Cardiff Castle, evidently knows the value of this chaste beautiful *Gladiolus*, seeing that one of his houses is well stocked with it. A number of bulbs massed together in 6-inch and 8-inch pots were bearing good spikes of bloom, which, mixed amongst *Pelargoniums* and other bright flowers, produced a fine effect.—CAMBRIAN.

THE ROCK GARDEN AT KEW.

IT is satisfactory to observe that although it is only a little over two years since the rock garden at Kew was commenced, the progress made towards what may be called a good garden of its kind has been both rapid and successful. That a rock garden was necessary for the proper cultivation and display of the vast collection of hardy plants at Kew is abundantly shown by the present state of the plants in this new addition to the hardy plant department as compared with their appearance when grown in the flat worn-out beds in which the principal portion of such plants used to be grown at Kew. Before proceeding to describe this new garden it may be well to consider for a moment the style of garden that would best fulfil the requirements of an establishment so much frequented by the public as Kew is. To construct a rockery on the same plan as has been followed in the formation of almost all the rock gardens with which we are acquainted might perhaps have resulted in a much more imposing general effect than is presented by that at Kew, but it could only have been accomplished at the sacrifice of the convenience of those who frequent Kew for purposes of study, and more especially of the thousands who through the place during the summer months. It was therefore necessary, in order that the public might enjoy the full benefit of such a garden, that the plan should be one that would admit of the near approach of the visitor to almost every plant, and at the same time one that would provide those conditions that are essential to the well-doing of the plants themselves. So far as it is possible to judge at present, both these conditions have been fulfilled, crowds of visitors being able to pass through the whole and examine the plants with the least discomfort to themselves or risk of injury to the collection.

There is a fitness in the term rock garden as applied to this new attraction at Kew. It is not merely a rockery in the sense of a position suitable for alpine and other delicate little plants, but it is this and the wild garden combined in one—a high, round-backed mound 20 yards across and clothed with Box bushes intermixed with tall Foxgloves; a dark Pine shaded recess girdled with a deep belt of Ferns, beneath which in a moist peaty alcove are crowded Lilies, *Cypripediums*, Heaths, and a host of other peat-loving plants; an excellent imitation of a ruined wall, crowned with Yuccas, Thistles, and *Verbascums*, and having all sorts of wall plants hanging from its crevices; a bog filled with *Spiræas*, Primulas, Rushes, *Gladioli*, *Rodgersia*, and other bog plants—these are some of the features in the Kew rock garden, and they might also be said to belong to the wild garden quite as much as to a rockery. A union of two such distinct styles is only possible when done on so large a scale as at Kew. It is an arrangement replete with interest because of the ever-changing character of both rocks and plants, which present a totally different picture at every turn. The imposing effect thus produced does not detract from the charm of the purely rock-loving plants. On the contrary, the wants of these have been carefully provided for, and alpine in endless variety everywhere meet the eye, peeping out from the protecting moisture-giving stones, or hanging over the projecting roots from the old tree stumps, which afford a happy home for many of the smallest gems.

The base of the Kew rock garden is a serpentine path 518 feet long and 8 feet wide, with banks and mounds on each side. "This path was first laid out in a winding course, so as to bring in as natural features the picturesque trees with which the ground was studded. The general idea, which was finally worked upon, was that of the rocky course of a stream, such as may be met with in some of the side valleys of the Pyrenees. Such streams dry up after winter, and are bounded by rock-piled banks, amidst the crevices of which a copious summer vegetation springs up. Above the rocks grow evergreen shrubs wherever the soil is of sufficient depth. The path at the bottom represents the dry bed of such a stream. On either side fragments of rock are piled up in a

manner as little artificial as was possible to a height of about 5 feet. Above this the view is limited by shrubberies of Box and *Rhododendron* rising to a varying height."*

Planted amongst these *Rhododendrons* and Box bushes are the Foxgloves already mentioned, many species of *Lilium*, *Rhubarb*, and other tall-growing plants, which break the monotony that would otherwise be caused by these formal shrubs. Along the top of the banks and outside the shrubs are Yuccas, *Verbascums*, *Kniphofias*, *Spiræas*, *Pentstemons*, *Silphiums*, *Centaureas*, and many other plants of striking aspect. Entering the path at the north end and proceeding onwards, one meets with a host of *Sedums*, *Lythrums*, *Pinks*, *Androsaces*, *Primulas*, *Hypericums*, and other small-growing plants, which nestle under the shade of or creep about over the weather-beaten Cheddar limestone, granite, sandstone, and other kinds of rock. These stones are so arranged as to provide the nooks and crannies which are necessary to the healthy existence of strictly alpine plants. Recesses occur all along the level of the path, and these are filled with colonies of *Alliums*, *Saxifrages*, *Hellebores*, *Gentians*, *Irises*, *Gladioli*, and numerous other moisture-loving plants. *Dianthus hirtus* forms a beautiful cap to a large flat-topped tree root, as also do some of the *Silenes*. Draping the roots of trees are *Ceraniums*, *Erodiums*, *Tropeolums*, *Potentillas*, *Clematisses*, &c. *Veronica Hulkeana* grows and flowers in the most perfect manner between boulders of granite, and numerous other species of New Zealand *Veronicas* are equally happy in similar positions. Popular plants may be observed growing side by side with rarities and "miffy" subjects, and every available spot is filled with objects of beauty and interest. The colonies are one of the finest features belonging to this garden, as they present in large masses some of the most striking of hardy plants.

At the foot of the wall previously mentioned a collection of British Orchids is being established, and some of these have already become at home under the special treatment provided for them. The bog garden is enclosed between two rugged walls whose faces are draped with various plants, and whose further ends join so as to form a shaded nook, over the top of which water trickles in a natural manner, and winds its way through and over the peat bed in which the bog plants are planted. In such a place *Spiræa palmata* is happier than we ever saw it when not treated as a semi-aquatic, whilst for companions it has the rare *Myosotidium nobile*, *Sarracénias*, striped Rushes, *Orchises*, *Ramondia pyrenaica*, *Gladiolus palustris*, *Ourisia coccinea*, and *Rodgersia podophylla*. Moving on towards the south end, we pass healthy groups of *Gentians*, beds filled with choice *Narcissi*, *Irises*, and *Hellebores*, until we come to the fernery, which is one of the most delightful spots in the whole arrangement. Shelter and shade are afforded by tall *Hollies* and *Limes*, and here springing up from amongst Moss-covered stones are the Ferns of our own island, as happy as if they were in a Devonshire lane. Towering above, and looking over the whole, are various Conifers, a pendulous form of *Wellingtonia* being conspicuous, with Yews, Chestnuts, Limes, and Maples here and there all along the length of the rockery. Altogether the arrangement is good, and no doubt, with a few alterations which will suggest themselves as time goes on, this rock garden will be one of the most interesting additions that have lately been made at Kew. W. B.

Catalogue nomenclature.—How is it that your great nurserymen in their catalogues of alpine flowers take not the slightest notice of authors? This is the cause of much confusion. For example, there are two *Primula alpina*, one of Schleicher and another of Reichenbach; two *P. viscosa*, one of Allioni and another of De Candolle; two *P. integrifolia*, one of Pollini and another of Linné; two *P. intermedia*, one of Hegetschneuler and another of Portenschlag; and many more. Of course, one never knows what one orders if no

* Kew Report for 1882.

authors' names are given in the catalogues, and it would be a step in the right direction if this state of things could be altered.—O. F.

NOBLE SUB-TROPICAL PLANTS.

WITH the aid of Palms, Cycads, Tree Ferns, and Musas, it is possible for us to reproduce in our large glass structures some of the most striking scenery of tropical countries. Out-of-doors, too, we have been shown in Battersea Park that by certain combinations of striking and distinct tropical and semi-tropical fine-foliaged plants in sheltered positions, a considerable charm may be added to our gardens. Flowers do not give that appearance of grandeur and repose which belong to the noblest of our cultivated fine-leaved plants, and particularly to those that belong to the orders just mentioned. It would be impossible to produce by means of flowering plants the grandeur and beauty with which most of us are familiar in the Crystal Palace, the large house at Chatsworth, and the Palm stove and temperate house at Kew. Here flowers would fall short of the effect created by a tasteful combination of huge plumose, feathery, and fan-like leaves, which are either arranged in enormous heads on tall, stout trunks, or nestle thickly together upon the apex of a short

countries are all dwarf and creeping in habit; not one of them possesses anything like a stem such as belongs to what we call Tree Ferns. In countries south of the Tropics, however, some of the noblest of arborescent Ferns flourish in great abundance. Not only in New Zealand and Tasmania, but even as far as the Straits of Magellan and Campbell Island, and in South Chili, Tree Ferns are found wild, and from some of these countries, and more especially from New Zealand, a large proportion of the splendid arborescent Ferns that grace European gardens has been obtained. The enterprise of the plant collector has, however, done much to equalise the distribution of these children of the south, so that one might almost say that the number of them cultivated in northern countries equals, if it does not surpass, the number of specimens that exist in a wild state. B.

POPULAR WEATHER PROGNOSTICS.

LAST year in the Quarterly Journal of the Royal Meteorological Society there was published a very interesting paper by the Hon. R. Abercromby and Mr. W. Marriot on "Popular Weather Prognostics," in which those prognostics only were dealt with which are associated with primary cyclones, or such bad weather as can usually be predicted some little time in advance, and which is often of considerable duration; lately another paper by the Hon. R. Abercromby has been published in the same journal, in which popular predictions of other states of the weather are reviewed. These are grouped under the following heads: Diurnal, sun, moon, stars, rain, snow, hail, wells, underground springs, &c. I may as well state here that when the word cyclone is used no allusion is meant to the violent tropical cyclones, but to those of a milder type, which often visit our shores, frequently spoken of as depressions, because the barometer is always lowest about the centre of the storm. An anti-cyclone, as its name implies, is just the opposite to a cyclone; it usually brings fine weather, and the barometer is highest about its centre. Diurnal prognostics are explained as "those which relate to weather changes in relation to the time of day." The first alluded to is "a high dawn indicates wind; a low dawn fine weather." This is shown to be sometimes true, but to frequently fail owing to the capriciousness of clouds and mist. The next is the well-known saying, of which there are so many versions:—

The evening red and the morning grey
Is the sign of a bright and cheery day;
The evening gray and the morning red,
Put on your hat, or you'll wet your head.

This is, I imagine, one of the oldest recorded weather prognostics, for in St. Matthew's Gospel, chap. xvi., verse 2, our Saviour alludes to it as well known in his day: "When it is evening ye say it will be fair weather, for the sky is red, and in the morning it will be foul weather to-day, for the sky is red and lowering." The truth of this prediction is explained as follows, to take the morning first. In really fine weather there is generally so much mist in the early morning, "that the sun does not break through at once, and thus there is little or no bright colour. If the sky was dirty from a cyclone front, the morning would also be grey, but it would also be watery and could not practically be mistaken;" but if from a cyclone of such moderate intensity as only to form clouds, or from the clouds of an approaching thunderstorm there are no morning mists, then the red of dawn will be reflected on them and the sunrise will be red. As neither of these conditions are those of settled weather, the prognostic is a good one. "Sometimes when there is too much wind for mist to form, the sky is cloudless and the red which must precede dawn flushes up into the sky and indicates a fine day; under these circumstances the red may last till the sun is fairly above the horizon." In the case of sunsets: "In dry cloudless weather as the sun begins to set the light tint becomes yellow, then orange, which quickly passes into red on the western portion of the horizon only; still later the red disappears, and there is sometimes an afterglow of yellowish grey. This kind of red, therefore, is associated

with settled fine weather. If, on the contrary, the sky is grey and dirty from a cyclone front, there is no development of colour at all. "The sun goes pale to bed," as the popular saying runs, then as of course the cyclone comes on, rain will certainly fall. When the sun sets in a sky free from haze, but more or less covered with cloud at more than one altitude, then a gorgeous display of colouring is generally the result, which is so frequently the case in fine weather, some clouds not only reflecting the rays they receive direct from the sun, but also reflected light from other clouds; hence the variety of tints. The ordinary theory of sunset colours is that atmospheric impurities begin by absorbing the blue rays first, or, which I believe is more correct, by the blue waves, which are of a much shorter length than the red ones, being reflected so that they do not reach our eyes, while the longer and red waves are not so diverted. Professor Tyndall has shown that the usual blue of the sky is due to the scattering of the rays of light when they pass through an atmosphere laden with very small impurities, such as fine dust or minute particles of condensed vapour. The saying that "at sunset, red opposite the sun is a sure sign of rain," is usually true. The old rhyme, "a rainbow in the morning is the shepherd's warning, a rainbow at night is the shepherd's delight," is also generally a true prediction, for "if the weather was showery, so as to give a bow in the morning, it is known from the nature of diurnal variation that the wind, rain, and general severity of the weather will increase till about 2 p.m., and then grow finer towards evening." "If, on the contrary, a bow was seen in the evening, diurnal variation will naturally make a drier night, and by the next day the cyclone, with the rear of which the showers were probably associated, will most likely have passed away." Some persons believe implicitly in the hours of noon and 3 p.m. bringing lasting changes if the weather happens to change at those times, and in changes at other hours being but of short duration. These predictions cannot be relied on. "In cyclones a wet or cloudy morning often has a short break about 10 a.m.; the weather then has a marked tendency to break again about 4 p.m." "If the weather improves about noon in spite of natural diurnal increase, the cyclone is probably passing off; and if the improvement should take place at 3 p.m., the gain will continue, either from diurnal diminution of a not very intense cyclone, or from the passage of the cyclone," but the author is unable to explain why a clearing about 2 p.m. should not hold. The following prognostics are said to be "tolerably trustworthy, though subject to frequent failure:" "Rain at seven, fair at eleven; rain at eight, fair late." "Rain before seven, fine before eleven." "If the rain fall on the dew, it will continue to fall throughout the day."

"Much twinkling of the stars is a sign of rain;" this is, on the whole, a good prognostic, and is explained by the atmosphere in unsettled weather being then composed of strata varying in temperature and moisture. "Rain with a south-east wind is expected to last some time." This is not always correct. "Sometimes when the intensity of a cyclone is very great there is a south-easterly gale in front, and then the prognostic fails." But sometimes the cyclones coming in from the Atlantic are arrested by an anti-cyclone over Scandinavia, and remain over England for a day or two; under these circumstances a north-east wind is developed, and the rain which accompanies the cyclone continues while the cyclone lasts. It is a popular idea that in deep wells the level of the water rises before rain, or that the surface is agitated and the water discoloured, and that they frequently discharge large quantities of air, and that springs flow more rapidly or become discoloured. These prognostics are in the main correct, and may be explained by the fact that the pressure of the atmosphere is considerably less just before heavy rain, as is shown by the usual fall in the barometer, the lower pressure allowing air to pass more freely out of fissures in which it is often compressed; for the same reason drains and cesspools often smell worse than usual before bad weather. A sudden



Group of noble sub-tropical plants.

stem. Unfortunately, we are unable to use such giants as are here described in the sub-tropical garden in summer, owing to the havoc that would be made amongst their fragile foliage by strong winds and heavy rains. Some of the Cycads are, however, stout enough to bear our stormiest summer weather, and these might be used for out-of-door arrangements for at least one-third of the year. Many Palms, too, some of the dwarf Tree Ferns, and even Musas might be employed in producing a new and tropical effect in the more sheltered parts of the garden during the warmer portion of the year. The contrast formed by placing such plants amongst those that are hardy with us always adds materially to the charm of our gardens, giving the whole what is termed a tropical appearance. We have no forms of foliage that bear any resemblance to the leaves of the plants just mentioned, and indeed it may be said of Palms, Musas, Tree Ferns, and Cycads that they are the most characteristic forms of tropical vegetation with which we are familiar. It is interesting to observe the total absence from the flora of nearly all countries north of the Tropics of any representatives of these four families of giant foliage plants. Palms, Musas, and Cycads constitute three distinct natural orders, whose geographical range is almost exclusively tropical, whilst of Ferns the species found in northern

reduction in pressure often causes an unusual escape of imprisoned gas in coal mines, and bad explosions are often the result. Anyone who may wish for further details on this subject will find them in the Quarterly Journal of the Royal Meteorological Society for last January.

G. S. S.

NOTES ON GARDEN TOPICS.

Judging Melons.—At the Royal Horticultural Society's Show what an interesting ceremony the judging of Melons at the fruit and vegetable show on June 24 must have been! There were seventeen Melons staged—a puzzling quantity—and the jurors determined the qualities of the winning examples without the assistance of the only sense that could guide them to a right decision—viz., the taste; the fruits were neither cut nor tasted, the report says. I am told also that there was nothing to choose between the appearance of many of the exhibits, so that the only qualified organ brought into play by the judges must have been their noses, and the nasal organ that could distinguish a first, second, or third degree of excellence in seventeen fruits must have been an unusually keen one of its kind, otherwise one can but think that such judging must have been a complete farce, and nothing else—heads I win, and tails you lose. The names of the owners of the noses in question ought to be recorded. The flavour of a Melon can only be determined by tasting, for the best Melons by no means always smell best, and, besides, a Melon has other qualities than sweetness; it may be dry, and far from luscious as well. How did the sense of smell determine all these things? Naturalists say that “to civilised man the utility of the sense of smell is comparatively small; but that it is occasionally much increased when other senses are deficient”—common sense, for example; but who would dare to charge the wise men who judged the Melons on June 24 with any such differences?

Air-roots on Vines.—These appear to be unusually abundant this season, judging from the frequent allusions to them in all the papers. Whether air-roots do any harm or not may be a matter of dispute, but no one will deny, I think, that air-roots are at least roots in the wrong place. The Vine is not an Orchid, neither does it produce air-roots, except under glass. We never heard of nor saw any anywhere else at least. They are the result of artificial culture therefore, and the main, if not the only, cause of them is a too moist atmosphere. A steaming basin of water set below a joint will cause air-roots to appear on any Vine. The probability is, however, that for every air-root produced on a Vine stem there is less root action and growth in the roots proper. If the organised matter from the foliage is put out anywhere else than in the soil, it is certain to be destroyed in time (air-roots perish annually), and is therefore matter and force lost. If growers would regard air-roots as an abnormal growth and as indicating impaired root action where most root action ought to be, we should hear less about them. Those who avoid the steaming practices of past times are not troubled with air-roots on their Vines.

Unshaded Cattleyas.—A contemporary, discussing Messrs. Backhouse's practice with Cattleyas, urges that it is necessary to be careful to submit only such species to the direct sunlight as are naturally benefited by it, but neither the writer referred to nor anyone else but Messrs. Backhouse have ever told us that Cattleyas should be allowed to go entirely without shading from strong sunlight. A sight of Messrs. Backhouse's large houseful of Cattleyas has, however, apparently converted some growers to the practice. At the York Nurseries the Cattleyas are not shaded in the least. During all the sunshine we have had lately they have been fully exposed, and I believe there is not such a generally healthy collection in the world. Discussing this subject with one of the representatives of the firm the other day, he said, “Our plants never receive any shade, but our Cattleya house is much larger and more airy than most Orchid houses, and that may

have something to do with it.” This does not tally with the notion that “small houses are best for Orchids,” as some good authorities maintain; but many cultivators, not of Orchids only, hold that the internal capacity of the house has a good deal to do with the well-being of the inmates, and the tendency is to favour roomy and rather lofty structures as being both more effectually heated and ventilated and not so likely to induce scorching. Under sudden vicissitudes of weather, sunshine and cloud the temperature does not fluctuate so greatly in large houses, it is said, and probably with truth, and that itself would explain a good deal. Only those, however, who can devote houses to Orchids alone can do as Messrs. Backhouse does. Those who grow stove plants and Orchids in the same house must compromise matters, but it is something learned to know that Cattleyas succeed better without shade than with it.

The rainfall and Grape culture.—It has been said and thought that the best Grapes are generally found in this country when the rainfall was heaviest, and some statistics furnished from time to time to prove this, have certainly given a great impetus to the watering of Vine borders. If the theory holds good, such localities, for example, as Drisbaig and Portree, in the Highlands, and Sty and Sleathwaite, in the Lake district, should be noted for their Grapes, as at all these places as much rain falls in one month sometimes as falls in twelve months in other parts of the kingdom. Facts, however, begin to contradict the rainfall assumption. It may be that gross Vines and large bunches are favoured by a dripping climate, but the largest bunch came from Midlothian, where the rainfall is the least. Taking general excellence as the test, however, and looking at the productions that appear at the exhibitions and the places they come from, it will be found that the rainfall theory will “not hold water.” Nor was it reasonable to suppose it would when we reflect that out-door Grape culture in England has never succeeded anywhere but in the driest spots where the rainfall is lightest, as in Norfolk, for example. Besides, a heavy rainfall means dull skies and less sunshine, conditions which all cultivators know are the reverse of favourable to the culture of the Grape. “Corn and wine” have from time immemorial been associated together as the products of a fertile soil and sunny skies, and in our own country it may be safely asserted that where the one succeeds best the other will also, but that is not where most rain falls.

Grape growing in Jersey.—The *Chronicle* has a reporter in Jersey just now who must belong to a past age, when shibboleths and secrets of culture were believed in, and who would have done well to have gathered some knowledge of Grape culture at home and other matters relating to the subject before allowing himself to be crammed on the subject at Jersey. We are told that “Mr. —'s system of fertilising his Vines to their high state of bearing and size and delicacy of fructification is a secret, but at the same time he will so far disclose it as to tell you that one year he uses lime, a second well-rotted stable and poultry manure, and a third, fourth, and fifth an artificial compost prepared by himself at home—how and with what he is ‘mum’ about, and rightly so. His former experience as a chemist has taught him, and the lesson is to his interest. He is a free water-giver to his Vines, and has erected at a very considerable expense a pumping apparatus, from the tank of which, placed in a tower 80 feet high, about 100 tons of water can be pumped daily.” How considerate of the grower and former chemist to part with a portion of his “secret” to his visitor, who, if he had put his own figures (which he gives) together, would have found that the crops that astonished him were often excelled at home. One of the “secrets” appears to be the pump which pumps up the 100 tons daily. The cultivator is a “free water-giver” surely. The area of his glass is given at less than a quarter of an acre, and taking no account of the copious rainfall of the Channel Islands, the 100 tons

daily is just about equal to the quantity which is supposed to have fallen at the flood which sailed Noah's ark over Mount Ararat! Big waterers, make a note. J. S. W.

GARDEN FLORA.

PLATE 449.

PHAIUS TUBERCULOSUS.*

SINCE Mr. Ellis introduced that wonderful Orchid *Angraecum sesquipedale*, from Madagascar some thirty years ago, there has not been imported from that island a more remarkable plant than the lovely Orchid of which an illustration is herewith given. When some two or three years ago the first living plants of it were successfully imported by M. Leon Humbolt, they made quite a stir among orchidists. Everyone wanted it, and the comparatively few plants of it that were disposed of at Stevens's fetched fancy prices. Since that time it has been the aim of a good many Orchid growers about London to thoroughly master the cultivation of this new Madagascar Orchid, which is unquestionably one of the most beautiful ever yet discovered. The collector's highly-coloured descriptions and brightly painted sketches at the time when the plant was introduced and sold had a wonderfully fascinating effect upon Orchid growers, and when the first living flowers were produced at Burford Lodge, the interest in the plant was increased still more, and everybody interested in Orchids were trying their utmost to flower plants of it. But, alas! almost everyone seemed to fail in even enticing it into vigorous growth, and it has long since been relegated to the list of “miffy” plants that are scarcely worth troubling about.

There is, however, some hope yet that this charming plant may prove amenable to garden treatment, inasmuch as it has been successfully grown and flowered at a few places about London. The most successful cultivator appears to be Mr. Billiard, gardener to Mr. Sillem, at Lawrie Park, Sydenham. During last February three of Mr. Sillem's plants flowered; two bore five, the other three flowers. Two distinct forms were represented amongst the Lawrie Park plants, one being much deeper and richer in colour than the other. Both these forms are shown in the annexed plate, which was drawn in Mr. Sillem's garden from the plants in question. As to the extreme loveliness of the plant, the plate amply speaks for itself, and its habit of growth is also suggested. The plant has a sort of creeping rhizome about as thick as one's finger, and from the tips as well as the sides of this tufts of long plicate leaves are produced similar in size and form to those shown in the plate.

CULTURE.—Various recipes have been given from time to time for the successful culture of this plant, but we cannot do better here than recommend the line of treatment so successfully followed by Mr. Billiard. “Our plants,” he says, “have been grown on the north-west side of a span-roofed house, close to the glass, in a temperature from 65° to 70°. We keep the sun from them as much as possible. They are potted in equal parts of peat and Moss, with plenty of crocks and charcoal as drainage. When making their growth they require an abundance of water at the roots. We find it necessary to frequently sponge the plants, as red spider, thrips, and green fly are particularly fond of them. Last year from three

* Drawn in Mr. Sillem's garden, Lawrie Park, Sydenham, February 20, 1884.



plants we had three spikes, on which eighteen flowers opened. This year from the same plants we have had five spikes, which gave us twenty-four flowers in all." This new Madagascar Phaius must now be regarded as the finest of the genus yet introduced to gardens. The few others, however, are highly important garden Orchids, and probably there is not a more generally cultivated Orchid than the old Chinese *P. grandifolius*, or *Bletia Tankervillei*, as plantsmen of the old school still call it. It is so well known as to need no description here. Another noble Phaius is *P. Wallichii*, from the Khasya hills; it has large bold foliage and tall spikes of buff-coloured flowers. *P. irroratus* is also a beautiful Orchid, unfortunately too scarce; and again there is the *P. bicolor*, the very handsome plant that was recently certificated as new at South Kensington under the name of *P. luridus*. *P. Blumei* and its variety *Bernaysi*, still so rare, are to be met with in some of the richest collections; also *P. Dodgsoni* and *P. callosus*. The three *Thunias*, *T. alba*, *T. Marshalliae*, and *T. Bensoniæ*, are often placed under the genus *Phaius*, but for garden purposes they are abundantly distinct. The *Phaiuses*, therefore, are important garden plants, and their value is enhanced by the fact that they are all of easy culture, with the exception of *P. tuberosus* and one or two other Madagascar species that have not yet been successfully cultivated in this country. W. G.

SEASONABLE WORK.

FLOWER GARDEN.

CASTOR-OIL PLANTS.—To those in search of sub-tropical effects in the summer garden, and yet lack the convenience for wintering large growing sub-tropical plants, the varieties of *Ricinus* or Castor-oil plants will, indeed, prove a boon. Their rapid and stately growth, large foliage, and the ease with which they are raised all tend to enhance their value for the purpose just named. The varieties *armatus*, *Obermanni*, *viridis*, and *macrophyllus*, when sown in March and grown on without check, attain a height of 8 feet by August. The seeds should be sown singly in 3-inch pots; they quickly germinate in a temperature of 65°, and should be given this heat till they need potting into larger pots, then a temperature of 60° will be ample. By the beginning of May they will be ready to pot into 8-inch pots, and at the end of that month may safely be planted out in their summer quarters. Deep tilth and well-rotted manure are necessary to ensure vigorous growth. The deep bronze foliage and red-stemmed variety *Gibsoni* is not so strong a grower as the kinds just named, a circumstance which makes it all the more valuable for use as an outer line to beds of the strong green-foliaged sorts. This kind also bears pinching well, and may, therefore, be grown in the form of a bush.

GENERAL WORK.—At present there is but little to be done that calls for special remark, the principal requirements being the preservation of neatness by regularly mowing lawns, clipping edgings, and weeding and rolling walks. Keep bedding plants well supplied with water, removing all useless flowers at least once a week. Trailing kinds will require the same periodical attention as to regulating their growth, either by pegging down or training to sticks, as the case may be. Single Dahlias and other tall growers planted as "sentinels" amongst lower growing plants may need a portion of their growth curtailed, both to preserve symmetry and to prevent them from encroaching too much on dwarfier plants. Keep carpet beds trim. *Herniaria glabra* rarely needs clipping, and this merit renders it the best of all plants for forming a green groundwork, edgings, and intersecting lines in this class of bedding.

The dwarf Sedums and Saxifrages only require the flowers to be kept off them and to be pressed down with the hand to make them spread evenly. On herbaceous borders old flowers of *Pyrethrums*, *Mallows*, *Delphiniums*, *Spizeas*, and many others need cutting off; sticks also should be taken away, and the ground about such plants should be pointed over. Roses are in full bloom, and almost daily now there are numbers of decaying flowers, that for the benefit of the plants would be better off. Shorten also vigorous shoots, keep the plants well watered and washed, and then expect a good autumn bloom.

PROPAGATING.

HARD-WOODED PLANTS, such as *Heaths*, *Epa-crises*, *Chorozemas*, *Boronias*, and similar subjects, may in most cases be struck from cuttings during the summer months, although among them are to be found some that require great care in order to ensure success. The best cuttings are the young shoots that push forth after flowering, especially if the plants have been cut back; but even then it is better to take shoots of weak growth than stout succulent ones, which are very liable to decay. As it is absolutely necessary to keep them perfectly air-tight, bell-glasses should be used for that purpose, and the size of the pots will of course depend upon that of the glasses employed. In preparing the pots, invert a small one over the hole in the bottom; then fill up with broken crocks till within 1 inch of the top. The crocks should be clean, and gradually diminish in size from the bottom to the uppermost layer, to facilitate which a good practice is to pass them through sieves of different sizes, and keep each lot separate. The top portion should be those that pass readily through a sieve with $\frac{1}{4}$ -inch mesh, but, as the dust must be extracted from them, one still finer must be employed. A space of half an inch or 1 inch, according to the size of the cuttings, must be left for the soil, which should consist of two-thirds peat and one-third sand, the whole finely sifted. The pots being firmly filled with the above to within a little of the top, a thin layer of sand should be added and the whole slightly watered, using for this purpose a fine-rosed pot.

IN TAKING THE CUTTINGS, where not too long, all that is necessary is to strip them off and remove the bottom leaves to the extent necessary for insertion, but if too long to be treated in this way the top only must be cut off at the length required. In removing the leaves a sharp-pointed pair of scissors must in some cases be used, or in others let the top part of the cutting be held firmly, but gently, in the left hand, and let the leaves be stripped off one by one with the right hand. This effects a saving of time, but should only be used when the leaves come clean away from the bark without tearing or injuring it in any way; if they hurt the bark, of course the scissors must be used to remove them. Before putting in the cuttings press the bell-glass slightly in its place; the imprint in the sand will serve as a guide in inserting them, otherwise they may be put in too near the edge, and thus get pressed down by the glass. Put them in rows at a sufficient distance to stand clear of their neighbours, and take care that they are made thoroughly firm, especially at the base. When a potful has been put in, a thorough watering must be given to cause the sand to form a smooth, unbroken surface. This watering may either be done with a fine-rosed watering-pot, or if the cuttings are so small and slender that the weight of the water alone would cause them to overbalance, the better way is to set the pot when completed in a pan of water, not of sufficient depth to float over the surface, but still enough to enter by the bottom and give the soil a good soaking. After watering leave the glasses off for a little time to dry the foliage, then put them in securely and shade from sunshine. Where there is not a propagating house for this class of plants, the next best place is a cold frame, one or two lights of which may be partitioned off for that purpose, and treated accordingly. The bell-glasses must be wiped and removed for a little while each morning, and a

strict watch must be kept for the least symptoms of decay, on the approach of which a little more air may be given, but not more than is necessary, as the soil soon dries, and frequent waterings are hurtful. If attended to in this way a fair measure of success may be reasonably anticipated, but of course constant care in the matter of shading, watering when required, and drying up superfluous moisture will be necessary till they are rooted. When that happens give air by degrees, and gradually harden them off; then pot in small pots and grow on, taking care to stop them when necessary, as the foundation of a good plant is formed when in a young state.

INDOOR PLANTS.

CONSERVATORY.—Now, when the whole of the spring-flowering hard, as well as most soft-wooded plants that bloom during the earlier part of the season have done flowering, stove plants in bloom will come in most usefully to take their places, as if associated with the hardier kinds of *Palms*, *Tree Ferns*, *Cycads*, and other fine-leaved plants and tastefully arranged, they have a very fine appearance, and will make a display equal to that which existed in spring. Where many of the occupants of conservatories are permanently planted out, such a re-arrangement as is here recommended can only be partially effected. At this time of year, when insects increase very fast, corresponding attention must be paid to destroying them, or it will be impossible to keep the stock in a healthy condition. Sponging by hand is a slow process, and seldom more than partially effective. It is much better where it can be done to take the plants out of the houses and syringe them freely with insecticide, as if the work is well done, all the interstices in the leaves and bark where the eggs and larvæ are hid are reached. Care should be taken to keep roof plants as free as can be from such insects as brown or white scale or mealy bug, for where these exist to any extent on climbers overhead they are certain to be communicated to every plant underneath them on which they will live. It is well as far as possible to select climbers for roof decoration that do not afford acceptable food to these pests, for although there are but few plants on which some or other of the numerous insects existant will not live, yet there is much difference in this respect.

LILIES.—Where a good stock of these are grown in pots they are most useful in conservatories; plants of *L. eximium* that have done flowering must be well supplied with water so long as the foliage remains green; they may then be planted out in well prepared soil, as they are not likely to bloom much a second time where at all forced until they have had a season or two to recruit their strength. *L. auratum* and other species require to be similarly attended to in the matter of water, also to be kept free from aphides, as on the retention of the leaves until the bulb growth is fully completed depends their well-being in future. *L. giganteum*, though mostly planted out in the open ground, will, if well managed, attain a larger size and produce more flowers in a pot; but it does not usually increase so well in this way by the production of suckers. Where this fine Lily is grown in pots, we have found it best to turn it out of them immediately the blooming is over, giving plenty of water if dry weather ensues. Plants of the different varieties of *L. speciosum* should have the stems supported by sticks before they get too far advanced, and in carrying out this operation with Lilies, care ought to be taken not to injure the bulbs; through want of caution in this much mischief is often done.

ABUTILONS.—A sufficient stock of these should always be kept up. Independent of their decorative value as pots plants, their continuous habit of flowering is not surpassed by many things which are as easily grown. Their ability to flower through the winter if accommodated with a little extra warmth is a still further recommendation. The white variety *Boule de Neige* is so useful for cutting, that it deserves a place everywhere where winter flowers are in demand. It blooms in a

very small state; plants of all the varieties struck from cuttings put in now and wintered in small pots will make useful blooming stock next summer.

GENISTAS.—Small or medium-sized examples of these are much more useful than large specimens; their easy propagation and the little difficulty involved in their after-treatment is such as to make them deserving of much more general cultivation than they receive. Presuming that the plants are now out-of-doors, any shoots that show a disposition to outgrow the rest should be cut back, but no attempt ought to be made to keep them too formal by pinching in the whole of the branches, as is sometimes done, which gives them an over-stiff appearance. In the case of young, thriving examples of these Genistas, where the pots are small and have got full of roots, they should be frequently supplied with dressings of light manure or manure water, and as they are liable to the attacks of red spider they ought to be syringed every evening in dry weather.

FERNS.—Where there are large structures devoted to Ferns, and a portion of the larger species are planted out, attention from time to time should be given to keeping the larger growing kinds from encroaching too much upon the weaker-habited sorts. This is especially needful where many of the stronger sorts with creeping rhizomes exist. These if strong and not checked soon extend in all directions; this can be corrected by cutting the fronds, which so far reduces strength as to prevent their spreading too fast. The rhizomes or creeping stems may also be shortened, which will cause them to break back and induce a closer, more compact condition. One of the mistakes committed in the cultivation of the tree species of Ferns is giving them too much root room, either when planted out or when grown in pots or boxes; in both cases when accompanied by more artificial heat than requisite it invariably induces a greater extension of the fronds than is admissible within the limits of a plant house, unless where it is much larger than usual, the result being that the strong growers smother the weaker ones, and the interest attached to the collection is reduced by the smaller number of kinds grown. But where plants of these larger growing kinds have had their roots confined within a limited space for any considerable length of time they should have frequent soakings with manure water during the growing season; when sufficiently supplied in this way they can be kept for years in a satisfactory condition. Liquid manure, or moderate dressings of some of the light manures now so much in use for applying to the surface of pot plants, answer well for most of the small-growing kinds of Ferns, such as the *Adiantums*, *Pteris*, *Davallias*, and others of a like character. In Fern culture no more artificial heat should be used than is absolutely necessary, for it not only makes the fronds unduly tender, but also renders them much more susceptible to thrips. Where these are present it is best to dip or syringe with tobacco water, as when fumigation is resorted to strong enough to kill the thrips it usually is more than the plants can bear.

FRUIT.

CHERRIES.—If any of the trees require potting, let them be well cleansed and shifted as soon as they are clear of fruit. Use good friable loam and lime rubble in a rather dry state; ram it very firm, leaving plenty of room for water and mulching when all is finished, and return them to the house for a week or two. If the balls are thoroughly moist at the time they are potted, one good watering to settle the soil, followed by daily syringing, will most likely suffice for the time they are kept under glass; but while guarding against getting the new soil too wet equal care must be exercised in preventing the roots or foliage from suffering. If large trees of late kinds are still carrying fruit which it is desirable to keep for any special purpose, some kind of shading will be needed for the front of the wall case, and a good covering of rotten manure, while keeping the roots cool, will be ready for washing in as soon as the crop is gathered.

PLUMS.—When the early kinds in pots show signs of changing for ripening discontinue syringing, but keep them well supplied with water, and, if convenient, separate them from others which are less forward. Keep all the pots well mulched with good rotten manure and supply the roots with diluted liquid at every watering. Use pure soft water for syringing, as Plums show every spot of matter left by the sediment from that which contains lime. Ventilate freely, as Plums do not make rapid progress in a high temperature, and the free admission of air adds greatly to the beauty of the bloom on the fruit. See that established trees of Jefferson, Golden Drop, and others are thoroughly mulched and supplied with water. Keep the foliage free from aphids by fumigation, and syringe twice a day in fine weather.

LATE PEACHES.—Where it is thought desirable to retard the ripening of fruit in the latest houses until September or October, all the ventilators should be set open by night and by day until the flowers begin to open, and again after the fruit is set in order to delay the stoning process. It is hardly necessary to say that the houses from which this late fruit is obtained should have hot-water pipes running round the sides for keeping out frost when the trees are in blossom, and again for supplying dry heat after the crop is gathered; otherwise such excellent kinds as Walburton Late Admirable, Barrington, Sea Eagle, and Prince of Wales Peaches, Stanwick Elruge Nectarine (which never cracks), Victoria (which few can ripen on open walls), and Albert Victor cannot be expected to ripen their wood and perfect their buds before the winter sets in. Some years ago, when we had a number of large trees in pots and tubs, we used to make it a practice to place suitable kinds out-of-doors in a sunny, sheltered situation about the end of June, but fresh arrangements now enable us to gather quite as late from vigorous young extension trees trained under the roof of a house in which we winter standard Bays and Aloes. The latter were taken out for the summer before syringing—never a heavy item in cold houses—affects their growth. The dry fire-heat after they go back to their winter quarters seems to suit all round alike, and the constant watchfulness so essential to success in pot culture is avoided. Many people are impressed with the idea that the planted trees give the finest fruit, but we have not found it so, particularly during the time the planted trees are extending; indeed, Peaches, Nectarines, and Pears of the largest size may be grown upon pot trees when they are kept under glass, and constant feeding of the highest quality is judiciously given to them.

MELONS.—Plants in pits and frames swelling off fruit will now take an abundance of water at the roots. During unfavourable, cold, wet seasons it is not advisable to water overhead in these structures, where the plants are more subject to canker than when grown in houses, and spider does not make so much headway; but advantage may be taken of a fine afternoon for flooding the bed with water at a temperature of 85° to 90° without wetting the foliage, and closing about half-past three, when the atmospheric moisture will produce conditions highly favourable to the rapid development of the fruit. Pay particular attention to the preservation of the old leaves, as they cannot be interfered with without producing a check, and give them full exposure to sun and light by cutting away all lateral growths and keeping the glass clean. Elevate the fruit on inverted pots on a level with, but not above, the foliage, as some kinds are liable to become discoloured when they change for ripening if night airing is neglected. Attend well to the linings by turning and renovating with fresh manure before the heat in the bed shows signs of declining, cover with good dry mats, and give a chink of night air to prevent an accumulation of rank steam and condensation of moisture on the fruit. Refer to previous calendars for directions as to the management of Melons in houses and heated pits. Get out young plants before they become pot-bound, and make a good sowing of some quick-fruited kind for coming in in October. Meantime

prepare a light, well-ventilated, efficiently-heated pit for the reception of the plants. If bottom-heat pipes are provided, the fruiting pots should be plunged within their influence when extra warmth is required for setting and ripening the fruit, but until the nights become longer fermenting material will produce a moist heat, in which Melons will revel through the early stages of their growth.

CUCUMBERS.—If a heated compartment, perhaps now filled with Melons, will be at liberty in about three weeks, the present time will be favourable for sowing a few seeds of Telegraph or some other favourite kind for autumn fruiting. Be careful to thoroughly cleanse the house, as Melons invariably leave an unwelcome legacy behind them. Also prepare the necessary fermenting material for giving bottom heat. Have it well worked before it is taken in, and defer plunging the fruiting pots or making the ridges until all danger of burning the soil has passed away. Make frequent additions of light, rich turf to the roots of plants which have been in bearing for some time, feed copiously with clear liquid, and water occasionally with warm clarified lime water to keep the hills free from worms.

FRAMES.—Cucumbers in these now in full bearing will require unremitting attention if they are to be kept in good order for any length of time. Dress them over three times a week, and earth up with lumps of rich turf and old lime rubble as the roots find their way to the surface. Attend to the linings, as want of bottom heat is often the forerunner of canker and mildew in frames where the plants have been started well and afterwards neglected. When the oldest plants show signs of exhaustion take one or two lights in hand, cut out all the fruit and old leaves, peg the Vines down on the hills, pack the joints with pieces of fresh turf, and keep the frame close, moist, and shaded until new growth sets in.

VINES.—Early houses from which all the Grapes have been cut may now have the ventilators left constantly open, and the syringe must be freely used to keep the foliage clean and healthy until the wood is quite ripe. Keep inside borders in a moist growth-encouraging state by the frequent use of diluted liquid, and add more mulching outside to protect the surface roots now working freely in the top-dressing. If the Vines are in a healthy state, lateral growths will soon be abundant and valuable, but they must not be allowed to run wild, otherwise they will do harm by crowding the main foliage now filling up and perfecting the buds from which the next year's crop of fruit is to be obtained. Now all the thinning is finished it will be advisable to go over the bunches in late houses with the scissors for the last time and remove a few of the smallest berries where they are likely to bind, for if once allowed to become jammed their removal cannot be accomplished without leaving marks which will be visible when the Grapes are ripe. If not already done, put on more mulching and give all the inside borders a heavy watering with warm liquid or guano water, fill the evaporating pans every morning, and damp the borders with the same after closing for the day. The agreeable change to warmer weather will at last enable us to reduce fire-heat, but nights are still cold, and a gentle circulation to admit of giving air at night and on dull days will be needful until the earth gets much warmer than it is at the present time. When Muscats have passed the stoning process and are safe from scalding, the house may be closed early and the heat may range as high as 90° for a time to swell the berries. The ventilators must, however, be again opened for the night, and then fire-heat will do good service in preventing the temperature from falling below 70°. Hamburgs and other kinds which do well under Hamburg treatment may range a few degrees lower—say, 65° to 68° at night; but instead of trying to maintain these figures in a dull, stagnant atmosphere, it will be much the best to warm the pipes, and, with the exception of the afternoon closing, keep up a constant circulation of air by night and day. When newly-planted Vines have

grown to the top of the house the leaders may be stopped, also the laterals, from the base up to the bud to which it is intended to prune in the winter; but above the pruning bud a free rambling growth may be encouraged to cover the whole of the trellis and back wall. Keep the inside borders well mulched and watered with pure water, and carefully preserve all the main leaves by a liberal use of the syringe once or twice a day. Give an abundance of air from the time the temperature begins to rise until it declines in the afternoon, then close for an hour or two, and re-open the ventilators for the night.

POT VINES intended for early forcing will now be changing to a bright nut-brown colour, and the buds at the base of the leaves will be filling up. If the canes are very strong it is not likely that they will become too prominent, but great assistance may be rendered to them by shortening back the laterals to one eye for the present, and by keeping the main leaves clean and healthy to the last. See that the roots do not want for water, and gradually check them if they have been allowed to find their way into the plunging material. Ventilate freely, shut up with plenty of sunheat every afternoon, and maintain a circulation of air through the night.

ORCHARD HOUSES.—By this time the latest Peaches and Nectarines will have passed the stoning process, and many of the early and mid-season kinds will have commenced their last swelling. As no more fruit will drop, it will be well to look each tree over and see that it is not carrying more than it is capable of bringing to maturity, and at the same time to stop all sub-laterals to increase the size, and turn aside the foliage to insure the perfect colouring of the fruit. Keep the trees regularly fed with good liquid and guano water. Mulch any that may require it with good rotten manure, and syringe well with tepid soft water about 6.30 every morning and again after the house is closed for the day. Trees growing in internal borders may also be stopped, to prevent the force of sap from passing by the fruit; mulch, and well water with water of a stimulating character or otherwise, according to the strength of the growths and the crop of fruit they are carrying. The insects to which these trees are now subject are spider and brown scale; the first can make little, if any, progress under good culture, and the second must be kept in check by brushing with a short, stumpy brush before it passes from the wood to the leaves.

EARLY HOUSES.—The principal work here will be good syringing to keep the foliage clean and healthy, and feeding with weak liquid to plump up the buds before the leaves fall. If directions contained in former papers have not been followed up, lose no time in getting the forward kinds potted and started into fresh root growth before they are placed in the open air. Many people are afraid to pot a fruit tree when in full leaf, but they need not hesitate, as fresh healthy trees under glass start into free root growth at once, and are fit for removal to the open air within three weeks of the performance of the operation. The principal points in the management of a newly potted tree are a close, moist, atmosphere, a temperature that will not excite the prominent fruits buds, and moderate watering until the roots begin to work freely in the new soil.

ORCHIDS.

EAST INDIA HOUSE.—The weather at present is very favourable to the occupants of this house; requiring, as they do, a high temperature all the year round, it is very seldom that the temperature can be kept up sufficiently high without the aid of artificial heat. It does not require much just now with the night temperature up to 50° and 55° as a minimum. The temperature of the house runs up to 90° in the afternoon when the blinds are drawn up, and it does not fall rapidly. At one time we used to damp up the house between seven and eight on the evenings of warm summer days, but we fancy this is unnecessary work, and probably the moisture evaporated causes the tempe-

perature to fall more rapidly than it otherwise would. It is a good plan to sprinkle water about the first thing in the morning—say about six a.m. Admit more air as soon as the temperature rises a few degrees, and if the sun strikes directly on the glass, let down the blinds before seven. There is not much danger of plants being injured by over-watering at this season; more likely they would suffer if allowed to become over-dry. Those who enquire how often a plant should be watered should also take into consideration its size. A large specimen potted in peat and Sphagnum might not require water for two weeks, while a very small one of the same kind ought to have it two or three times a week. Others require a daily supply. We have now reached the season of the year when Orchid flowers are not over-plentiful. Although the recent additions of new species and varieties of all kinds of Orchids to our collections has greatly increased the number and variety of Orchid blooms, we find that some varieties and species of Cattleyas do better here than in the Mexican house, such, for instance, are *C. Dowiana*, *C. gigas*, and *C. superba*. All these do well on pieces of Tree Ferns when they are recently imported. After a time, probably three years, they should have a further supply of food. This is done by placing the block in a pot and filling it round with clean crocks and charcoal, keeping the roots well out of the peat and Sphagnum, which should be placed over the top of the drainage. *C. superba* may be exempted from this treatment, as it succeeds best if always kept to the blocks; when potted they should still be kept near the glass. Some of the *Zygopetalums* do best in the warmest house; *Z. rostratum*, for instance, is also one of them that succeeds well potted in peat and Sphagnum. All plants now making roots freely, such as the *Angræcums*, should receive a plentiful supply of water at the roots, and be kept free from insect pests.

CATTELEYA HOUSE.—Under careful management the flowers of *Odontoglossum vexillarium* last a long time in beauty on the plants, although they speedily fade when cut and placed in water. When some of our large specimens with more than 100 flowers on a plant had been in flower for nearly a month, we cut the spikes from the plants to save them from exhaustion. Probably the cause of the degeneration of many large specimens is owing to their being exhausted by over-flowering. We also moved the plants into the cool house, as the temperature in the Mexican house with all the shades and blinds down, and plenty of air circulating through it, stood at 97° in the afternoon, we could keep the cool house down to 90° at the same time. This excessive heat has been continued for some days, and is trying to cool Orchids, although the Cattleyas seem to like it. We had a discussion some time ago about the best time to repot Orchids. We have potted *O. vexillarium* at all times, and they seem whenever they are repotted to be making roots. Three-fourths of the plants were potted last year on November 7. We have repotted them in previous years in September, they have grown away each time without a check to their growth, and we have no doubt that each plant potted now will do equally well. We potted all that were not done in November on the 3rd of the present month. Cattleyas are taking advantage of the warm weather and are making roots freely from the base of the young growths. *C. Trianae* is in advance of the *C. Mossiae* and *C. Mendellii* type in this respect, but all of them, including *Lælia purpurata*, are rooting freely. The *C. Aclandiae* type should be kept out of the way of slugs; they make so few roots, that if the few they do produce are eaten off the plants cannot but be much injured. They do best suspended near the roof glass on blocks or in baskets, and in the winter time they like more heat than some of the others; they will do well during summer in the Cattleya house. If any of the *Cypripediums* require repotting they may now be attended to; the flowering period is mostly over of the *C. barbatum* group, *C. villosum*, and some others. The very handsome *C. Domini* flowers later and is the more valuable on that account; we have three plants of it now in flower

and they are greatly valued; it does well in this compartment now, but in winter must have the warmest position, or may be placed in the warmest house.

COOL HOUSE.—The difficulty in such hot weather as we are at present enjoying is to keep the house sufficiently cool. Those who have their plants in a lean-to house with a north aspect have an advantage over those who have their plants in a span-roofed house exposed to all the points of the compass. We do not throw the ventilators wide open during the hottest part of the day to admit the drying air with a rush, but by keeping the wall ventilators open in the front and the top lights well open under the shading the air is admitted in such a way that it is made moist before it reaches the plants. Also by damping the internal walls, paths, and stages two or three times a day, there is a considerable evaporation which reduces the temperature each time the operation is performed. It is necessary to keep all the occupants of the house well supplied with water. A surfacing of nice green growing Sphagnum will insure a healthy condition of the plants if the above instructions as to ventilation, &c., are attended to. A word or two may be written about *Lycaste Skinneri*. It succeeds well in the cool house all the year round, and water may be applied to it as freely as it is done to *Odontoglossum Alexandræ*. We have not yet seen such well-grown plants of this useful Orchid as Mr. Ward used to produce at Leyton some ten years ago. They were grown at a considerable distance from the glass in a lean-to north house. They had plenty of water at all seasons, and not only did the plants grow into large specimens in an incredibly short space of time, but as many as from nine to a dozen flowers were produced from one bulb. Like the *Odontoglossums*, the plants were constantly surfaced with live and green Sphagnum Moss. Green fly increases on the flowers during the present drying, hot weather; it must be removed with a fine brush. Thrips, which also seem to increase freely during such weather, must be destroyed by dipping the plants in diluted Tobacco water, afterwards sponging the leaves well with clean tepid rain water.

KITCHEN GARDEN.

DISEASE in the early section of Potatoes has made its appearance in some places. Cutting off the tops underneath the surface is a better way of saving the tubers than lifting at this busy season; therefore lose no time in doing this, as delays are dangerous, and no Potatoes are more likely to be affected than Myatt's. Champions and other late sorts are as yet all right. We are now busy gathering bush fruits and Strawberries, the latter a heavy crop. When the weather is damp we fill up every available inch with spring and autumn Broccoli, leaving the Kales till later on. Our first planted Brussels Sprouts are 1 ft. high and growing strongly. Keep the ground free from weeds among all crops, hoeing or using the cultivator as the case may be. Among Peas, John Bull is a trifle longer in the pod than most others, and good in quality. If one has it, Standard, and a kind called Marie, and Omega for use in August and September, few others will be needed. If Endive is not yet sown it may be put in now; nothing is gained by sowing very early, as the young plants generally run to seed. Shallots are ripening fast; ours are planted in drills filled with burnt refuse, and in this no grubs or other vermin ever attack them, not even mildew, and the result is a clean, healthy crop.

Tree poems.—Dr. Oliver Wendell Holmes, in a recent letter to the Cincinnati tree-planters, says—"I have written many verses, but the best poems I have produced are the trees I planted on the hillside which overlooked the broad meadows, scalloped and rounded at their edges by loops of the sinuous Housatonic. Nature finds rhymes for them in the recurring measures of the seasons. Winter strips them of their ornaments and gives them, as it were, in prose translation, and summer reclothes them in all the splendid phrases of their leafy language. What are these Maples and Beeches and Birches but odes and idylls and madrigals? What are these Pines and Firs and Spruces but hymns, too solemn for the many-hued raiment of their gay deciduous neighbours?"

STRAFFAN HOUSE

YESTERDAY I went with a friend to Kildare for an hour or two, and this place delighted him. You get a pretty peep at the house itself from the bridge which crosses the Liffey, and a glimpse of the Lime trees in the park also. I first saw Straffan on a sunny day in early spring, when the river reaches were quite aglow with crimson Dogwood, but now all is green, and the Rose harvest is most beautiful. Crimean Snowdrops and Apennine Anemones are asleep under the Lime trees on the lawn, but hardy flowers of many kinds are now gay and bright. Delphiniums, Clematises, Phloxes, and Geraniums are brilliant, so also a thousand other budding things. The place is rich in shrubs

specimen of *Drynaria* (*Polypodium*) *diversifolium*. Water Lilies below and climbing Lilies (*Gloriosas*) above, Filmy Ferns of delicate beauty, and tropical twiners of many a hue find here a genial home. One could say much more than this, for in all truth the garden at Straffan is an ideal one.

F. W. B.

ORCHIDS.

THE PUPPET ORCHID.

(COMPARETTIA FALCATA)

THE *Comparettias* are Orchids but rarely seen now-a-days in collections, though several species



The Puppet Orchid (*Comparettia falcata*).

and in fine trees. The Holly Ferns on the island by the river are of astonishing size and vigour, so also are *Lastrea cristata* and the plummy Ostrich Ferns, and here in the Grass wild Orchises are quite at home. Just now, however, the Rose queen is supreme; Roses on walls, in beds, borders, and on pillars; Roses, trained and untrained, everywhere. A plant of *Clematis lanuginosa* on the gardener's cottage is now a picture 20 feet high, and covered with its great pale lilac stars. Straffan is one of the most hospitable of gardens; all things beautiful are welcomed there. It may be a rare Fern, a curious Orchid, or a little gem from the Alps or Pyrenees, a new vegetable, or a finer fruit. It is all the same; the best of care and culture are freely given, and in few gardens, even if more favoured in some ways, are better results obtained. The Disas at Straffan are quite a feature in August, and are even now sending up their spikes most luxuriantly. Here, too, is a wonderful

were introduced from South America and described and figured years ago. Perhaps the finest of all the species in size is *C. macroplectron*, a pale rosy form introduced only two or three years ago. The one we now illustrate has rosy purple flowers on gracefully arching spikes, and was figured and described long ago in the *Botanical Magazine*, t. 4980, and I think a figure is also given in Paxton's "Flower Garden," published in 1850-3. Planted in fibrous peat in a shallow pan and suspended from the roof of a warm Cattleya house, this plant grows freely, and its long spurred blossoms are so peculiar in form, that as seen dancing in the breeze in the Mexican forest one can readily understand why the name of "Puppet or Marionette Orchid" should be applied to it.

F. W. B.

Stanhopea tigrina (J. C.).—A very fine variety, quite equal to that known in some collections as *superba*. The flowers are not only unusually large, but the colours rich.

ORCHID SHOWS.

TO THE EDITOR OF THE GARDEN.

SIR,—I don't like to see the managers of exhibitions, professedly more or less scientific and intellectual, lending themselves to anything which looks like gulling the public. I don't like to see even a willing public swallowing the bait. And, though I am too old a hand and too cunning even to nibble at an artificial Orchid, I don't like to find myself among a shoal of such gaping gudgeons, much less to let my pet plants take a stand in such equivocal company. If I went to the opera and heard five orchestras, each playing a separate act of "Norma" at the same time, it would not be very satisfactory. If I went to Ascot and saw a jockey riding three horses at once, I should think it a spectacle fitter for a circus than a racecourse. One does not expect to meet with such follies in common life, and if they happen to us, we either resent them with a *quid pro quo*, or, in a fit of good humour, laugh at and forget them. But when we talk of the Botanical Gardens, and are promised something first-rate as a flower show, our heads are apt to get a scientific twist, and to be filled with thoughts of the beautiful and the natural—of the wonderful things that bud and blossom we know not how, and of the tyrannical control that the hand of man has shown in subjecting them to his caprices. We don't imagine that we are going either to the Egyptian Hall or to some suburban fair, and have no notion of an exhibition of legerdemain, nor ever dream of being treated with a sight of Dutch-toy Siamese twins. Credulous idealists, you have for the moment forgotten that where there is a show there must be showmen, and that showmen, in catering for a public badly trained and with extravagant caprices, are apt to fall into ways which shock an expert. What is wanted in a flower show is neither bulk nor eccentricity, but choice things and genuine things, or, as we say in a common way, "little and good"—rules and arrangements that everybody understand and follow, and the assurance that we shall find those rules observed. I only wish we could get all this, and then I could satisfy the innocent curiosity of my country cousins, who come up in the season and ask me to show them the marvellous productions of Nature that I sometimes talk to them about at my Christmas visits to their charming little paradise outside the Bradshaw boundaries, and as yet not sophisticated by interparochial exhibitions. I flatter myself I can tell a Potato from a Parsnip, and I never call a bunch of Roses a specimen Rose, nor a bed of Tulips a plant. If I did, people would be very likely to say that I was more simple than themselves, or even something more uncourteous.

Well, we get to the show, and I begin my task as cicerone. Orchids are strange things. Of course they find a place at the exhibition. As curiosities not very common in country collections we turn to them. They are fine objects for marvelmongers. They are comparatively novelties as the pets of amateurs, very costly, little understood by the people, and capital things for fun-pokers to cram the *gobe-mouches* with. Cousin A exclaims, "What a magnificent 'specimen plant'!" Not so fast, if you please. Hold your admiration for a minute; let us examine, and make use of the bit of arithmetic left us from our school days. Certainly two and three make something else than one. There are five spikes and the "specimen plant" has made five new bulbs. Finely arranged, but Nature did not do it. Who is to blame for the trick? "Must satisfy the public taste," says one of the committee, "and how else are we to make up our Daniel Lamberts—so many single gentlemen rolled into one?" We turn away disappointed, but do find some genuine specimen plants. One alone in its pot and its glory is sufficient for us. We prize the honest pot, and the exhibition prize goes to "Danielus Lambertus Compositus." On going back to look at the label on the prize pot we note it marked as an *Epidendrum*, which naturally suggests the reflection that somebody deserves the gibbet. Now, is it possible that com-

mittees and judges, so demure in manners, so phraseologically impeccable, so exact, as members of Truefitt, to an unit in the number of hairs in the pet curl—is it possible they can self-acquittingly acquiesce in these equivocations? One can put up with and laugh at a good practical joke from a set of roystering boys. But proverbial botanical innocence throws us off our guard against juvenile tricks on such an occasion. It would make the goddess blush carnation, and give up all the Floralia till Regiercal purity once more reigned in Regent's Park. Can they be deceived? No. They would not lend an ear to a drill-sergeant who tried to persuade them that his company doing the goose-step was a specimen soldier. Then, being neither cajoled themselves, nor willing accomplices in the deceptions of others, why not carry out their laudable ambition to make a grand show in a purely legitimate way? In so doing they would disarm prejudice and make sure of all co-operation that is worth having.

Only begin and go on in this fashion. Make schedules liberal enough to suit all classes of exhibitors. The rules and regulations once announced, allow no evasions of them. Let us have a class of "specimen plants," but let it be understood that such a specimen must be a single plant, alone in its pot, shown as it was grown, and in no way falsified by additions or any unfair tempering. This would give a chance to many amateurs who have neither time nor space to cultivate largely, but who often have the luck to produce growths of extraordinary interest. They would then with their one phenomenon confidently avail themselves of the opportunity of getting it under notice and be proud if it were pre-eminent. And other amateurs would send ungrudgingly out of their abundance, and feel a gratification in helping to make an honest show a success. Then there might be another class of flowers grouped in pots, each with limited and well-defined numbers of plants, giving an occasion of skillful combination to those who had many choice specimens at command. This is a kind of exhibit upon which there would be no great difficulty in putting a sufficient check. To please those who like things in a grandiose style, and have a multitudinous assemblage of Orchids under growth, a class might be opened in which they could serve themselves of pots of all dimensions, so as to demonstrate what effect can be produced by masses of plants put together artistically, and bring out to view the beauties of harmony and contrast. In this way all might be contented and have an opportunity of wholesomely ministering to their own ambition and the pleasure of visitors. At the same time, with the exact rules, the rigid compliance with those rules, and all arranged in such a way as to be fairly seen and estimated, the committee would gain credit and abundant assistance, the judges would know what they were about, and be able to make and give their decisions upon precise and strongly-marked lines, so as to satisfy competitors and guide the public, and the sight-seers would obtain what they came for—pleasure and instruction in noting intelligently the characteristics of specimens and bouquets, and the beauties of the amalgamation of masses. Better borrow a leaf from Manchester and do something of this kind. Better make an *auto-da-fé* of all old peccadilloes, cut the acquaintance of all botanical Pagans, and begin afresh by acting fairly, calling a spade a spade, showing the people what is true as well as new, and rewarding honesty instead of letting temptation dangle in the sight of sinners. If not, they may be quite sure that our country cousins will go home, and, with their provincial imitative propensities, soon shame them into reformation by exaggerated caricatures, unless indeed they have, before that ridiculous sort of castigation arrives, succumbed under the incubus of their charlatan partnership.

J. T. PEACOCK.

Sudbury House, Hammersmith.

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INDOOR GARDEN.

BEGONIA METALLICA.

THIS is one of the very best of Begonias either for summer or winter use, and, in addition to its flowers, its bronzy leaves make it a desirable plant for grouping along with others in the intermediate house during winter and in the cool greenhouse during summer. The flowers, which are of a light rosy colour, are set upon stalks sufficiently long to show them up well above the foliage. Young healthy plants of this Begonia growing in 4½-inch or 6-inch pots will be found to last a long time in flower when used in rooms or in windows, and small neatly-grown plants of it are suitable for dinner-table decoration, the bronzy foliage looking well upon the white table-cloth. The flowers, too, when cut are very useful. In order to keep up a supply of flowering plants all the year round recourse must be had to cuttings. A few put in early in February will yield a plentiful supply of flowers during the summer and autumn if grown in a cool house or pit, and few plants can be found to grow and flower more freely in a shady conservatory heavily draped with climbers than this Begonia. Another supply of young plants should be raised from cuttings put in about the middle of July, and kept growing on in a pit or house as close to the glass as possible. Pick off the flower-stems as they appear, which will induce the plants to grow more vigorous and healthy. In the end of October or beginning of November place them in the coolest end of a plant stove or intermediate house, and if in good healthy condition they will be in full flower by Christmas, and will keep up a supply of bloom for six or eight months. We have now some old plants which have been in bloom about fourteen months.

This variety of Begonia will be found to be suitable for planting out against the back wall of a warm house, or to train up pillars or rafters. In order to obtain strong healthy plants which will yield a supply of flower in a short space of time, select cuttings from old plants which had been previously cut down. Cuttings made of shoots growing from the base of old plants will be found to root freely. Let them be 4 inches long, strike them in light soil, consisting of equal portions of good turfy loam and fibrous peat, sifted through a fine sieve, mixed with plenty of sharp silver sand. Fill 4½-inch pots with this compost, pressing it firmly into the pots, put a little clean silver sand on the surface, and water through a fine rose. The cuttings may then be inserted round the sides of the pots. Place the latter in a propagating pit or house, and when rooted pot them off singly in 3-inch pots, using the same compost as for the cuttings, with a portion of leaf-mould added, but with less sand. After potting place the plants in the same temperature as before until they get well established, when they may be transferred to a cooler house and be shifted into larger pots. They will soon grow into useful flowering plants. When the pots get full of roots they will be greatly benefited by being fed either with liquid manure or with some other fertiliser. Under this treatment strong, vigorous plants full of bloom will be the result.

WM. CHRISTISON.

Woodham Hall, Woking.

BOUVARDIAS IN SUMMER.

BOUVARDIAS are most valued in winter, but, if desired, they can be had in just as good condition in summer, when I find them to be very useful in a cut state, and also as decorative plants in pots. The double-flowered kinds surpass the single sorts as regards endurance. Our plants blooming now were struck last summer. They were then potted off into small pots and good sturdy growth encouraged. They were stopped once or twice before winter, which they passed on a light shelf in a warm greenhouse. In February we potted them in 5-inch and 6-inch pots. They were then kept in gentle heat for a little time to encourage free growth, and they are now good bushy plants, full of flowers. Besides those grown for flowering

now, we had a quantity of old plants that had flowered early, and that were kept for propagating from. These yielded a crop of cuttings, after which they made plenty of young shoots, and were gradually hardened off. About a month ago we planted them out in a warm, sheltered border prepared for their reception by giving it a liberal dressing of manure and decayed leaf-mould. Being kept well supplied with water, they soon became established, and are already showing great numbers of bloom-buds, of which a succession will be kept up till frosts set in. In this way each summer we gather great quantities of bloom from a small bed of these plants. Cuttings sometimes fail to strike after the season is as far advanced as this, though in early spring they struck root readily. This is owing to the shoots becoming too firm in texture, and therefore, instead of taking cuttings from the strong vigorous shoots that are produced out of doors or in a cool house, a few plants should be placed for a little time in a warmer structure, when the slightly attenuated growth produced under such circumstances will strike readily. The cuttings must be kept in a close case and prevented as much as possible from flagging till rooted. The sorts which we grow are *B. jasminoides*, pure white and fragrant; *elegans*, scarlet, a good free growing kind, and one of the hardiest; *flavescens*, yellowish; *Dazzler*, bright cerise; *Humboldtii corymbiflora*, long tubed, pure white, and highly fragrant; *The Bride*, when first expanded nearly white, but afterwards changing to flesh colour; *Queen of Roses*, bright pink, sturdy in habit; *Vreelandii*, white; *longiflora flammea*, reddish rose, and very free flowering; *rosea oculata*, a very floriferous pale flesh-coloured kind. To these must of course be added the two double-flowered varieties, *Alfred Neuner*, white and *President Garfield*, pink. H. P.

HERBACEOUS CALCEOLARIAS.

As these require a reasonable amount of care in order to grow them properly, some trouble should be taken to select the seed from a good strain, and as there are several sources from which it can be obtained, there is no excuse for growing inferior flowers. I find that if the seed is sown any time in July, strong plants may be obtained. Always sow in a rather large and deep seed-pan, because a small and shallow one requires constant watering to keep the soil moist. The pan need not be drained so carefully as for plants that have to remain in it all the winter, and the soil should consist chiefly of loam with some sand added and both should be run through a rather fine-meshed sieve together; after the pan is filled with soil it should have a good watering before the seed is sown; then cover the seed very lightly with fine sand. A slate should be placed over the pan, which should be set in a vinery. After the third day it will be necessary to watch the pan narrowly, and as soon as the plants appear the slate must be taken off. The cooler the quarters after this time the better. Light without the sun shining on the seedlings they must have, or they will make but poor progress; a cool shady greenhouse or cold pit where the pan can stand on a cold bottom, such as a bed of soil, is what they like. It will be necessary to water very carefully and only give enough to keep the soil regularly moist. In six weeks from the time when the seed is sown the plants should be large enough to prick out. For this purpose some fresh pans should be prepared by filling them with fine, rather light, sandy soil, into which the plants may be put about 2 inches apart each way, taking them back again to their old quarters. They may be allowed to remain in the pans until the leaves touch each other, when they will want more room both for roots and leaves. The next move must be into 4-inch pots, which should be clean and well drained.

THE SAME SOIL will be suitable for this and all subsequent pottings. It should consist of three parts good fibrous loam and one part leaf-soil or well-rotted farmyard manure, with some coarse sand or road grit added. As these plants require a free and open medium for the roots, the compost had better be used rather dry than wet, for if

potted in a soil that will run together in a mass the roots will not take to it in a kindly manner. The most suitable place for them during winter and until they come into flower is a brick pit, in which the pots can stand on a bed of ashes and the tops of the plants be about 12 inches from the glass. They do not require any artificial heat; in fact, they are always better without it, and bottom-heat they greatly dislike. With a good lining of either leaves or manure placed close to the walls of the pit and plenty of external covering on the glass, there will be no difficulty in keeping out the severest frost, and they will take no harm if shut up for six weeks or more if the weather should be severe. As a matter of fact, it is better to keep them covered up in frosty weather than to expose them to a fluctuating temperature. On all occasions when the weather is mild they must have plenty of air. In regard to root moisture, it is only necessary to say that they require as much as they can make use of so long as the soil does not get overcharged. With a good substantial soil, clear water is all that is required to secure healthy plants and good heads of bloom.

IN REGARD TO SHIFTING the plants into larger pots, it is essential that they should have more root room as soon as they have filled the pots full of roots in which they are growing until they are put into those in which they are to flower. In our own practice we shift from 4 inches into 6 inches, and from these into 8-inch sizes, which are the largest we use, and which will be found suitable for many purposes. To obtain good specimens in the last-mentioned size, they ought to have their last shift, if the weather is mild, about the end of December. Green fly is sometimes troublesome, but it can be got rid of by fumigating with Tobacco. J. C. C.

5215.—*Eucharis amazonica*.—In forming beds on which to plant out this *Eucharis* the pipes ought to be covered so as to keep them from coming in contact with the soil, and it is better in every way if they do not touch anything, as by so doing not only is the heat obstructed, but the pipes suffer injury from rust and scaling off of the iron. To avoid this proper bearers should be placed on each side of the bed, where they may be formed by building up loose bricks, one on the other, to the desired height; then slates may be laid across, reaching from wall to wall, where to get them to rest firm and solid, they should be bedded on moist mortar, but before doing this the pipes should be thoroughly painted, as they cannot be got at afterwards. The best kind of paint to use is oil and lamp-black, which forms a sufficient body to preserve the iron without stopping radiation. With the pipes covered and attended to in the way referred to, all will be ready for putting in the drainage, which should consist of a couple of inches or so of corks, cinders, or gravel, and to prevent the interstices becoming filled up, a layer of leaves or half-rotten litter should be laid on the top. The proper soil to use for filling up the bed is a mixture of leaf-mould and loam, or refuse peat and loam, with plenty of sharp sand to keep the whole open. Having got so far, the next thing is to turn out the plants, which, if well rooted and healthy, are best planted entire, as then there is no check or disturbance, and they go right on growing at once. To start them fairly it is necessary to give a good soaking with tepid water, and keep them well syringed twice daily; they always thrive best when they have their leaves wetted, and the doing of it wards off insects, which are sure to assail them if the air immediately about them becomes at all dry. We have a bed arranged and treated precisely as I now recommend, and the plants have improved wonderfully since they have been in it, and now flower finely twice in the year. When growing and blooming we give them plenty of water and frequent doses of liquid manure, after which they are kept drier for a short time to give them a rest. Ours are under the hip or back lights of a Cucumber or Melon house, where they get shade, and the position just suits them, although during winter

they would be quite as well if they were a little nearer the glass, as then the flowers would possess more substance.—S. D.

Heliotropes for winter bloom.—In a large trade establishment where cut flowers were much in request, we used to grow a quantity of *Heliotropes* in $\frac{1}{2}$ -inch and 6-inch pots to come in during November and December. The cuttings were put in in April, and grown along in the ordinary way, getting them hardened off as early as possible, and allowing them the advantage of full exposure to the sun and a free circulation of air through the summer, so that by late autumn they formed compact little bushes with from twenty to thirty flower-heads. An important point is to keep them well pinched back during the summer, picking off all flower-buds as they form, but discontinuing the stopping from the beginning of September, and taking care that the plants are housed before they can get touched by frost.—J. C. B.

FRUIT GARDEN.

FORMING STRAWBERRY BEDS.

THE time has arrived when steps should be taken to either improve the Strawberry supply or to make proper provision against any falling off either in quality or quantity. Strawberries are not like various other fruits, which go on fruiting for many years with but little trouble on the part of the cultivator; on the contrary, they are an expensive crop, especially on some soils. I have known cases in which they have continued to be profitable without renewal for many years, but, as a rule, three good crops from the plants are all that it is wise to take from them. The first season, or that following planting, the earliest crops and the largest fruits are obtained; the second season heavy crops of generally good fruit are produced; while during the third season extra heavy crops result, but the majority of the fruits are of a size fit only for preserving. In order, therefore, to always have Strawberries in perfection, both as regards earliness and quality, heavy and extra heavy crops, we must plant a bed and destroy a bed annually, none being left to impoverish the ground after having perfected three crops. I have had to manage a garden in Middlesex within ten miles of London in which Strawberries could not be induced to perfect more than one good crop of fruit. I was told that such was the case, but I did not believe it till I had tested the truth of the assertion. In this case we had to take extra pains in securing strong early plants, and these, being liberally treated, grew to a good size, and yielded very fine crops the next season, when they were rooted up. I have also known cases in which two years were the limit, while in others four good crops may be taken before the plants are destroyed. In all and every case it is imperative that a new plantation be annually formed to the extent of the whole, half, one-third, or one-quarter, according to circumstances, of the space annually devoted to them. I have already commented upon the various plans adopted in preparing the runners for planting, and will now give my ideas as to the best methods of

PREPARING THE GROUND. It is generally considered the correct thing to deeply trench for Strawberries, and it is this that makes the crop expensive. This trenching may be necessary in some cases in which, perhaps, the soil is light and shallow, but after having practised in eight widely separated counties, I can safely assert that trenching is quite unnecessary, and in some cases it has proved actually disadvantageous. Consequently, no one need be deterred from commencing Strawberry culture on either a large or small scale on the score of expense. Trenching is thought to be the only sure method of encouraging deep root-action, and thus to a certain extent rendering the moisture-loving Strawberry less dependent on the watering-pot in case of dry weather setting in. It is an old, valueless notion, however, and one which will not bear to be closely

scanned. Here, for instance, on our fairly heavy land no trenching is ever resorted to for Strawberries, yet I defy anyone to grow heavier or better crops than have been picked here for three successive seasons. Moreover, I have observed that the heaviest crops of fine saleable fruit are grown in the open fields, the soil of which is only moderately heavy and is only ploughed up. A friend of mine in Essex has about twenty acres of ground always cropped with such Strawberries as Alice Maud, Sir J. Paxton, President, Doctor Hogg, and British Queen, and with him a failure never happens. If they fail in any way it is in realising remunerative prices when the supplies are extra heavy. If trenching were necessary, growing Strawberries for the markets would be a bad speculation. The Strawberry is really a surface-rooting plant, and should be treated accordingly. Given a deep, loose, and perhaps rich soil and the result will be a superabundance of foliage, with but poor crops of inferior fruit. On the other hand, if planted in firm enriched ground, and the roots are encouraged to keep near the surface by means of moisture-holding fertilising mulchings, they will form sturdy foliage and well-matured crowns, followed by abundance of strong bloom trusses. Moreover, if the roots are near the surface they receive all the benefit of the top-dressings, whereas if deeply buried they make but few fibres, and much of the manure is wasted. If the ground is trenched at all it should be done at least six months before being planted with Strawberries, and this will give time for it to settle considerably. Such early trenched ground may with advantage be utilised for a crop of early Potatoes, the latter apparently deriving more benefit from trenched or double-dug old garden soil than any other crop with which I am acquainted. Our Strawberries are grown in three different positions, so as to afford a long succession, and in each case they invariably follow a crop of early Ashleaf Potatoes. Directly the latter are cleared off and the ground levelled, a little short manure is forked into the surface; the Strawberries are then planted and mulched, and the ground is never dug again till three crops of Strawberries and one of Broccoli have been cleared off it. Many object to manuring the surface soil before Strawberries are planted, preferring in some cases to bury the manure deeply for the future wants of the plants, as well as to avoid too strong growth the first season. For my part I prefer to give the plants a good start, especially seeing how much importance is rightly attached to the first crop.

WHERE AND HOW TO PLANT are the next points to be considered. Those who have sheltered raised borders at their service may well utilise one or part of one of these for the very earliest supply. From such positions we have sometimes been enabled to pick good ripe fruit from ten to fourteen days earlier than from the open ground. In this manner we are able to turn out the plants in pots or pits much earlier than would otherwise be the case, and most gardeners fully realise what a relief this early riddance is to over-crowded houses. Failing these early borders, we should grow a few early Strawberries in frames, as has been lately suggested by an able contributor to THE GARDEN. Earliness being the primary object, and seeing that young plants are invariably the first to yield, I should consider it unwise to leave the plants to crop a second year either on the raised wall borders or in the temporary beds intended to be covered with frames. Directly they have perfected the best part of their crops and have yielded a number of early runners they should be cleared off and a fresh plantation made with the strongest and best rooted runners procurable. To succeed these we plant a breadth of early and second early varieties on the upper or warmest open position in the garden, and for the latest crops the lowest and coolest quarter is selected and main crop and late varieties are planted. In some gardens Strawberries will also succeed well on north borders, but here in these positions they are flavourless, and Gooseberries are planted instead. In every case the ground is well levelled, heavily trampled,

and well soaked with water, or if poor with liquid manure prior to planting. As before stated, we prefer plants that have either rooted into the manure employed for mulching or have been rooted in frames or boxes. These move with a good ball of healthy fibres and take to their quarters much more readily than those layered in pots and which are oftentimes much root-bound. In whatever manner the runners are rooted they ought to be thoroughly moistened prior to planting, be put out with a trowel very slightly below the level of surrounding soil, and be firmly fixed with the handle of the trowel. A good watering should follow, and if possible a mulching of strawy manure or short grass. Supposing all this to be properly carried out either in July or early in August, a valuable crop should be obtained the following summer. Many err in not

GIVING PLENTY OF ROOM to Strawberries. Thick planting may answer for one season, but subsequently they unduly shade each other, and inferior produce is the result. All our strong growers, with the exception of those on the warm border, are planted in rows 30 inches apart, and the plants stand 18 inches asunder in the rows, these distances admitting plenty of light, air, and sunshine to reach all alike; and there is also a pathway between every two rows, without any damage by trampling accruing to the spreading clusters of fruit. As these spaces appear rather excessive, it is advisable to crop between the rows when first planted with either Lettuces, Endive, or Tripoli Onions, and this may be done without injury to the Strawberries, but it is seldom that it can be done after the first spring. Some good growers manure freely and plant double the number of plants in the rows intended for a three years' permanency, cutting out every other plant directly after the first crop is matured. This plan, however, is not commendable where manure is scarce, as such a number of plants quickly impoverishes the ground. The variety Dr. Hogg, not forming strong foliage, may be planted in rows about 2 feet asunder, while those fruited only one year may be set rather more thickly. In districts where large, rough, but thin stones are available much may be done in the way of forwarding Strawberries by forming raised beds. These may be enclosed with the stones set up edgewise, and may be 4 feet wide, so as to take three rows of plants—one in the middle and one near each edge. Such beds require occasional nearly complete renewal of the soil, but in spite of this they are strikingly profitable, and may well be formed in low-lying cold or badly-drained gardens. Old or forced plants may be put out in rows 30 inches asunder, or if required to furnish early runners for layering, a distance of 3 feet may be given them. They should be thoroughly soaked before they are planted; the whole of the balls should be buried, and the soil firmly rammed about them. They also require to be occasionally heavily watered till well established, as, should the old balls once become dry, they are not easily moistened again.

FORCED PLANTS of the earliest varieties—notably Vicomtesse Héricart de Thury—frequently yield heavy crops of fruit in the autumn, and some of the latest well repay lifting, re-potting, and placing in a moderately warm house to ripen the fruit. In fact, where there is plenty of house room, it is an easy matter, with the help of the Vicomtesse, to have ripe Strawberries nearly or quite all the year round. Those old pot plants which are not lifted, or which do not put heavily in the autumn, will yield enormous crops of fair-sized fruit during the following summer, but they very seldom repay being preserved for another season.

W. I. M.

Strawberries (J. Cook).—The varieties you send can only be named with certainty by some specialist who has a collection at hand for comparison.

Strawberry Burghley President.—Noting your approval of this Strawberry, may I ask that Mr. Gilbert would give us its history? Is it merely that well-known kind President that Mr. Gilbert has re-christened Burghley? or is it a seedling of his own raising? I presume it is the latter; and if so, when is it to be put into commerce?—H. W.

PACKING FRUIT.

THE fairly cheap light goods rates and quick delivery have naturally brought about a great increase in the transmission of perishable commodities, such as fruit by rail. Beyond supplying family wants when away from the home establishment where the fruit is grown, many gardeners have now to send their spare fruit to market, and on good packing in both cases depends much of its worth when it reaches its destination. Yet, notwithstanding that much has been said and written on this subject of late years, and details given about the best means of packing soft fruits, such as Grapes, Peaches, Strawberries, and others that, in order to have them of good quality, require to be ripe before gathering, it frequently happens that the condition of these after reaching their destination is anything but satisfactory. I have often thought that everyone who has this sort of work to do should, once at least, see his fruit unpacked after it had travelled far enough to test the packing. These remarks do not apply to the packing of Peaches, Nectarines, Apricots, Strawberries, and others that are gathered the greater part of a week before they are ripe, but to ripe fruit when gathered. No one will need to be told that such fruits as Apricots, Peaches, Figs, and Strawberries, when ripe, require much more care in packing than when forwarded in a state that makes them less liable to bruise.

THE PRIZES given now yearly by Messrs. Webber, at South Kensington, for packing soft fruits have done something to show the right line upon which to proceed. For Grapes, moderately deep boxes that will hold say not more than from 20 lbs. to 25 lbs. are best. A good thick layer of Moss should be put at the bottom to act as a bed, and the sides should be similarly well padded with Moss pressed firmly together; the whole should be lined with soft tissue paper, leaving a cavity for the bunches in the centre, in which they should be placed so as to fill the space full enough to avoid the berries rubbing against each other. Many packers put nothing on the top of the bunches, as whatever is laid on them removes more or less of the bloom, and unless there is a layer of Moss or other material put between the paper and the lid, so as to keep them close down, the paper is useless. If the box, however, was to be turned on one side or upside down, the covering over the top would save the injury that otherwise would be sure to occur. Peaches and Figs if ripe are most liable to injury in transit. Shallow boxes that will hold one layer of Peaches or Nectarines are evidently the best, and there should be a sufficient bed of Moss in the bottom and round the sides and a lining of thin paper; each fruit, too, should be enveloped in tissue paper, and if as ripe as it should be, a piece of wadding should be put round each outside the paper. Without this latter, if the box happens to get on its side or end, the weight of the two or two and a half dozen fruits which it may contain will so press on those that are undermost that they will be sure to be much bruised. A thin piece of paper over the fruit and a layer of Moss between it and the lid finish the packing.

CARE SHOULD BE TAKEN that the boxes are not too shallow to admit of enough Moss in the bottom and over the top to prevent the jolting in transit doing mischief. In the late competition at South Kensington the Peach boxes used by two of the competitors were too shallow to be depended on for carrying the fruit, if ripe, safely; in the case of one the inside depth was 3 inches, the other about 2½ inches; neither of which allows enough Moss underneath to make the fruit, if ripe, secure against bruising. Mr. Coleman, who took the second prize, had his Peach boxes 4 inches deep, which is not too much to keep all safe. The same applies to boxes for Strawberries; they should be deep enough to admit of a sufficient bed underneath as well as a covering beneath the lid, laying each fruit on a leaf of the plant, which keeps it from touching those next it; a good layer of leaves on the top under the lid keeps the whole cool. I have found Figs to travel best in a shallow box that will take one

layer of fruit, each wrapped in a Vine leaf, and the box lined bottom and ends as for Peaches, with Strawberry leaves in moderate thickness over them; the shape of the leaves is such that they do not lie closely together, thereby allowing air to circulate amongst them, and so help to prevent the fruit moulding—an evil to which ripe Figs are liable; the lid, too, should not fit too tightly.

T. BAINES.

FRUIT TREES IN POTS.

IN last volume of THE GARDEN (p. 531) "S. W.", deprecates the culture of fruit trees in pots. He says "he never saw a houseful of pot trees at one time carrying a good or even a mediocre crop all over." Allow me to say that I have grown scores of Peaches and Nectarines in pots in the same house for eighteen years in succession, and never once failed to obtain a full crop. As to quality, we had Peaches 10½ inches in circumference from three and four-year-old trees, and they carried off first prizes both at South Kensington and the Crystal Palace. On one occasion, when I counted fifty-four dishes of Peaches in competition, a dish of our Peaches from a tree the third year from the bud gained the first prize. Surely that is a sufficient answer to "S. W." when he asks for proof in the way of results. If fruits set badly or are not of good quality, it is not the system that is to blame. I have no interest whatever in advocating the pot culture of fruit trees, but I have derived a great deal of pleasure from it, and almost regret that it cannot be followed out in our new garden to the same extent that it was possible to do in the one which we have lately left. Trees in pots require a good deal of attention from the time when the fruit commences stoning until it is ripe—a period of nine or ten weeks. During the remaining forty weeks the labour is not at all exacting, and it is a great convenience to be able to turn the whole of the trees out-of-doors when the season for fruits is over, and transform the orchard house into a winter garden, in which Chrysanthemums and other winter-flowering plants can be kept from October until the end of January. "S. W." turns up the dark side of the picture; I prefer the bright side. The pot culture of fruit trees has, perhaps, been practised longer at Sawbridgeworth than elsewhere, and grand fruits are still obtained there from pot trees. Mr. Rivers sent to the late Crystal Palace show a collection of fruits the whole of which had been grown on pot trees. There were nine varieties of Cherries, of a quality that could not be surpassed. Early Rivers, a seedling raised at Sawbridgeworth from Early Purple Guigne, was the best; the fruit was glossy black, of the largest size, and rich in flavour. Black Hawk was also large and well ripened. Bigarreau de Schreken, a new black variety of large size, was rich in flavour. May Duke was very fine for that old sort. Bigarreau Napoleon was large and well ripened. The others consisted of Ludwig's, Gros Couret, Monstreuse de Mezel, and Emperor Francis, a new, large, and fine Cherry. Two or three dishes of Early Transparent Gage Plum were also very fine. The following Nectarines were exhibited in good condition—viz., Pine Apple, Rivers' Orange, Victoria, Humboldt, and Goldoni, the last one of the most recent of the Sawbridgeworth seedlings. It is distinct and more delicate in flavour than any of the other yellow-fleshed kinds, although it will probably not grow so large as Pine-apple and Humboldt. Peaches were represented by Exquisite, and I may say in passing that it is one of the most shy setters in cultivation, but here it was from pot trees, and it was the same variety to which I have already alluded as taking the first prize against fifty-four dishes, most of them from planted-out trees in Peach houses. Princess of Wales was another large and fine Peach. Gladstone, the Nectarine Peach, and Sea Eagle were also shown, the last probably the best late Peach yet raised. It ripens about the same time as Barrington, and is much superior to it. I may add that whatever knowledge I possess on this and kindred subjects is the result of practical experience.

J. DOUGLAS.

GRAPES NOT COLOURING.

WHEN, on the 28th of May last, I entered my present situation, I found two vineries (lean-to) with a good south aspect, but with borders very much neglected. In vinery No. 1, the early house, Black Hamburgs are planted inside with provision for the roots to make their way outside. The inside border has the appearance of having had at some time a superficial dressing of loam. The outside border is in a very neglected state. To all appearance these Vines have been planted a quarter of a century, and they have every appearance of having been heavily cropped. The present crop is very heavy and the bunches and berries unusually large. Nearly four weeks ago they began to colour, but the process stopped. The result is, not a single bunch in this house is fit for the table. Is the deficiency as regards colouring owing to heavy cropping or to the neglected state of the border? Vinery No. 2 is also planted with Black Hamburg, the roots being wholly outside. In May last the berries in this house were about the size of Peas. During last month the weather was very hot and dry, and the border began to crack. I had it twice thoroughly watered with three parts soft water and one part water taken from an old cesspool. The wood of the Vines in this house is fast approaching maturity, but there are no signs of the berries colouring. The larger the latter get the more unhealthy do they look. I am most anxious about them, lest, like the Grapes in house No. 1, they should not colour properly. Will some of your readers kindly favour me with their opinion as to the cause of the berries not colouring? D. MCK.

INSIDE VINE BORDERS.

"J. S. W." tries (p. 17) to shift his position in regard to Vine borders, finding that which he first held to be untenable. Anyone unprejudiced cannot fail to see that the condition of the roots of the Lambton Vines, in both the inside and outside borders, which were correctly described in the last volume of THE GARDEN (p. 532), was an additional instance to those previously brought forward in my favour, and which collectively have proved that "J. S. W.'s" original statement, that the roots would not remain in an inside border if they could get out, is wrong. Unable to reconcile his opinion with the profuse mass of roots present in the inside borders at Lambton, "J. S. W." now alleges that much care and coaxing have been bestowed on them. Does he mean to say there has been too much or more than the crops which the Vines have borne have amply repaid? If so, how does he reconcile his statement in the next sentence, where he expresses approval of the treatment to which Mr. Hunter had subjected them? "J. S. W." attributes the cause of the roots in the outside border being fewer than in the inside to their not having been coaxed like those inside. Those who are in the habit of seeing what goes on at Lambton and are acquainted with Mr. Hunter's practice will not require to be told that all that is needful outside, as well as in, is done for them. The course followed is that which all good gardeners recognise as right, viz., giving the most to sustain the roots where they exist in the greatest quantities. "J. S. W." triumphantly points to the outside roots doing all the work, whilst the extremities of the roots were annually lifted and new soil given them, and further, this season, he says, they carried the crop through when the inside borders have been re-made.

GRAPEGROWERS who have had to do with lifting the roots in one border when they occupy two are not likely to be misled by one-sided views of this kind, knowing from experience that it does not require an extraordinary amount of undisturbed roots to sustain the Vines in their first stages of growth before the lifted roots, where plentiful, as in the new borders at Lambton, get into action. "J. S. W." says a Vine border should last twenty years at least. This depends upon the character of the soil of which it is made. I know places where the soil is

such that in half that time it is as far worn out and unsuited to the roots as in other cases where the quality is good it would be in half a century, and this, I think, will be the verdict of others who have had much experience in Vine growing. "J. S. W." says it is for me to explain how the Lambton Vines support what I have said on the subject of Vine roots in outside and inside borders. If further proof in support of my views were wanted, there are few who will not see that the condition of these Lambton Vines is exactly to the point.

EVERYTHING REQUISITE had been done for them, outside as well as inside, and still they show clearly by their presence inside in so much greater quantities than outside that if well treated they will take as freely, if not more freely, to the inside border than to the outside. The unmistakable drift of "J. S. W.'s" latest communication is that too much has been done for the roots of the Lambton Vines to admit of their fairly representing the matter under discussion; but that is begging the question. "J. S. W." expresses approval of the way in which the Lambton Vines have been treated, yet he objects to the result of the treatment, viz., the quantity of roots in the inside borders, as not being a case that goes to prove that when well treated they will not desert the inside border for the outside.

T. BAINES.

STRAWBERRY SUPPORTS.

THE various expedients that have been suggested at different times for keeping Strawberries from being spattered by grit and for preserving them from the attacks of slugs have not in many cases been adopted. One reason of this is doubtless the expense, but to my mind there is a still more substantial reason, which is that when the fruit is supported at any distance from the ground it does not attain the same dimensions as if it had been left undisturbed. It may be difficult to explain why this should be so, but the fact holds good that unless the work is carried out with the greatest care, and the fruits only removed an inch or two above the soil, they will not grow to so large a size as those close to the ground. Such is my experience after having tried various plans to keep the fruit clean and out of the reach of slugs. It seems that when the fruit is near the ground the temperature, if not higher, is more uniform than when there is a current of air passing between it and the soil, and probably the degree of moisture which doubtless is considerably greater near the ground than elsewhere has something to do with its more rapid swelling. It appears to me that directly one suspends the fruit in the air by artificial supports we place it in an unnatural position which it resents by refusing to swell to its natural size. No doubt there is a right and a wrong way in using supports. The right way is, there cannot be a doubt, only just to lift the fruit clear of the ground. I am quite convinced it is wrong to have a greater space than 2 inches between it and the earth, and, further, if any supports at all are to be used, they should be put to the fruit some days before it begins to colour, in order that its surface may have time to get hardened by exposure before it commences to ripen. The skin of Strawberries is like that of Melons—very tender when just on the point of ripening, and a sudden removal from the shade of the leaves to strong sunshine would result in the surface of the fruit being scalded on the side exposed to the sun. Whether we shall ever get a suitable Strawberry support, and one at the same time cheap enough to use on a large scale, is doubtful. We have not made any progress in that direction for the past quarter of a century. The nearest approach to any serviceable invention were the Strawberry tiles registered more than thirty years ago, but they never found their way into many gardens. These tiles were set round the plants, and for rather small single ones they did very well, but where the plants grew vigorously it required three and sometimes four tiles to go round them, and

then they could not be got near enough to shelter some of the earliest and best fruit.

As regards the now common practice of using long litter for the purpose, one can hardly say a word against it, seeing that it is available in large quantities in most gardens, and it is a fairly good makeshift if laid on in good time, so that it can be well cleansed from all impurities by the rain, but it is not the best, nevertheless, and those who would like to have Strawberries sent to their table in the cleanest possible manner without any great outlay should allow their gardeners to take a lesson from the small market growers of Kent, or rather that portion of it that lies between Dover and Canterbury, where there are great numbers of small growers of this fruit, who select every sunny bank or sideland piece of ground that faces south for the production of early crops. These growers do not attempt to put anything over the surface until the fruit begins to swell. They then get clean wheat straw, and with a chaff-cutter properly adjusted the straw is cut into lengths of about 3 inches, and this is strewn sufficiently thick all over the surface to keep the fruit clean; but this is not its only advantage, for slugs do not like it; in dry weather it is too harsh and the ends too sharp for them. It is certainly the best material for the purpose with which I am acquainted. There is the cost of the straw, which might not amount to a large sum certainly, but the long litter now so much used may be had for the carting in most places, and that makes all the difference. In a large garden a score or two of trusses of straw would not be too much, which means an additional outlay that might cause some demur, and for the most part the gardener has enough to answer in that way, and gladly escapes all that he can when they do not concern matters absolutely necessary to carry on his work.

J. C. C.

Too much mulching.—"Cambrian's" Peach border that was injured by too thick a layer of juicy manure being laid on it is similar to what I have in several places noticed where fresh cow manure was in like manner applied with a view to benefit the plants by enriching the soil and keeping it moist, but the result of which was that the close mass excluded air, and kept the surface in a sodden state. I should rather suppose that the thickness of the mulching had not so much to do with the mischief as its density, which naturally brought about the result complained of. Mulching with moderately light material I have always found best.—T. B.

Protecting fruits and seeds.—We have three miniature double mirrors suspended in a triangular form from a piece of silk thread; these mirrors are hung on a bent rod at equal distances apart, according to the size of the plantation to be protected. These are continually revolving, and on a bird coming near it immediately sees itself from one or the other of them, and becoming alarmed does not attempt to alight, but flies off at once. We have two quarters of Strawberries, one at each end of the garden; one is covered with netting, the other is protected by the mirrors only, and I have not seen a bird alight where the mirrors are since the plan was adopted.—J. W. M.

Protection, or no protection.—Mr. Baines has quite misread my remarks on this subject. I did not say that frost which will kill Peach blossom will also always kill Gooseberries, as Mr. Baines puts it, but that what would kill Gooseberries would kill Peaches—quite another thing. Nor did I say that "the cold-resisting power of bloom is no greater in the case of trees with fully ripened wood than in others," but the contrary. What I do say is, that Peach blossom will perish under from 4° to 6° of frost, no matter what the previous treatment may have been, and I daresay poor, weak bloom will succumb to less. This is a specific statement in reply to Mr. Baines; can he controvert it? What gardeners want to know first is the maximum amount of frost which Peach blossom will endure. Once they know that, they

can shape their practice accordingly; but on this point Mr. Baines is very vague, and yet he should be able to put it into figures, as I have done, and then by-and-by perhaps we could test the matter practically, and see who is right and who wrong. There must be a limit to the power of endurance of blossoms; will Mr. Baines say what it is?—J. S. W.

NOTES.

Flowers indoors—A little bit of modern Venetian glass on my table makes a pretty bowl for Roses and their own fresh green leaves. But the red gold bowl is on a stem of opal, and a few slender sprays of common black Bryony are wreathed around it in quite a pretty way. A figured Japanese jar holds flowering Grasses and white Ox-eye Daisies, while an old brown jug, always sacred to golden blossoms, is now a picture, having a great sheaf of Corn Marigolds placed in it just as they were cut. Purple Canna leaves and an armful of white Lilies also make a good arrangement, and some terra-cotta vases on the floor are filled entirely with the great spreading heads of *Eryngium giganteum*. Irids, both golden and purple, never look better than with their own straight-sword-like leaves—nay, I have come to think that their foliage or greenery than their own is wrong for all blossoms.

Theory and practice—It has been the fashion to separate handwork from headwork as if the two were incompatible. One was for labourers and mechanics, the other for professional and literary people; one was for the poor, the other for the rich. But we are gradually learning that their harmonious union is the only means of the perfection of either. Ruskin says truly: "We want one man to be always thinking and another to be always working, and we call one a gentleman and the other an operator; whereas the workman ought often to be thinking and the thinker often to be working, and both should be gentlemen in the best sense. The mass of society is made up of morbid thinkers and miserable workers. It is only by labour that thought can be made healthy, and only by thought that labour can be made happy, and the two cannot be separated with impunity."

The right path—"Nothing can be great which is not right. Nothing which reason condemns can be suitable to our minds. To be driven by external motives from the path which our own heart approves, to give way to anything but conviction, to suffer the opinion of others to rule our choice or overpower our resolves, is to submit tamely to the lowest and most ignominious slavery, and to resign the right of directing our own lives." It is so with gardening. We are all too apt to do what is popular—what is supposed to be pretty or what is fashionable; but the only way to permanent success is to do what is right. In gardening, as in all things, we must search and struggle for the right way, and then keep on straight, despite either sneers or praise.

White Lilies—Clumps of Madonna Lilies and pale blue Delphiniums alternate on either side of a broad walk, and just now form a picture good to see. Beneath them, asleep in the hot sunshine, lie buried Snowdrop and Crocus, Scilla and Narcissus, in great patches or in slender lines, but the glory of a well-stocked garden just now consists in the sheaves of the old white Lily, than which no flower can well be sweeter or fairer. I know some cottage gardens in country villages on the cold Leicestershire clay where this old white Lily luxuriates, but it is not everywhere at home. I think Mr. Wilson says somewhere in these pages that it is with him one of the most difficult of all Lilies to manage, although, as we all know, it is one of the very oldest of all garden flowers. It was ever a favourite with the religious painters, who placed it in their pictures of the Madonna, but there is doubtless some still older legend which may account for this general usage as well as for the name. However this may be, one thing

is certain, viz., that as seen at its best no other Lily can be finer than *Lilium candidum*.

Permanent seed beds—Having many hardy and half-hardy seeds to raise every year, we have found a way to grow them which is at once less trouble and more successful than the old pot-and-pan system of sowing in cold frames. Our present plan is to sow on prepared beds in the open air. "Ah!" says our friend on the cold clay, or he of the harsh marl, "it is all very well on your light, sandy soil, but here our seeds so treated either rot or are killed by drought." My opinion is, that our plan may be made a success anywhere. A sunny, sheltered corner in a yard is selected. The bed may be of any size, and may either be edged with 12-inch boards placed on edge or by a wall of turf sods. The bed is then filled with the refuse earth from the potting benches, to which leaf-mould or rotten manure and sand are added. The whole is made firm and raked even, and on such a bed we sow all our hardy seeds as soon as they are ripe. We never keep seeds in packets or store them away to be forgotten in dusty drawers. Seeds sown as soon as ripe germinate quite readily, as a rule, even during mild winter weather. The pot-and-pan difficulty is banished, and cold frames are free for other stock. If some seeds do not grow the first year, they are in the soil and are not thrown away, as so often happens under the pot-and-pan method.

The time of Irises—After the latest Daffodils and before the earliest of Roses comes the first fresh flush of Iris blossoms. Of course in some gardens you can pick Iris flowers all the year round, or say *Iris stylosa* at Christmas, and *I. reticulata* blooms along with the earliest of Scillas and dwarf Daffodils, and wherever the grassy leaved *I. ruthenica* does well its buds pop up at nearly all seasons. But the time of Irises begins with the first blooming of the bearded *I. germanica*, is carried on by the Spanish and English kinds, and ends with a flush of the great butterfly-like blossoms of the Japanese race (*I. Kamperi*). These last are bold and beautiful wherever they luxuriate, and will bear comparison with the finest of Cattleyas in breadth of petal and in subtle colouring. The same may be said for the broad-leaved *I. pallida*, the flowers of which are enormous, delicate in colouring and possessing, moreover, a subtle whiff of fragrance at certain times of the day. Taken as a class, the rhizomatous Irids like good turfy loam, deep and rich, whereas the Xiphion or bulbous Irids rarely do well except in light, warm, sandy soils.

Souvenirs of travel—Some travellers bring pictures, carvings, or cameos to remind them of the pleasant places they have visited; I am content with a Fern root or two, which may be carried quite safely in a spare sponge bag, and which to my mind are even more directly associative and suggestive. This delicate *Asplenium* was gathered in the Val Acanzas in sight of Monte Rosa; that rare Polypody is a native of Monte Christallo, in the Dolomites; this Holly Fern was found on the summit of the Simplon half buried in the snow, that in the Fuscheral, on the route across the Pfauldscharte to the mighty Pasterze glacier; from the cool depths of the well in the convent courtyard at Padua, where Giotto's frescoes are still dimly visible, came this tuft of fragile Maiden-hair, as old, perhaps, as the frescoes.

The stately Osmund Fern is a relic of an forgotten visit to Mr. Froude and the Kerry coast; the Oak and the Beech, and the Parsley and the Hart's-tongue, and the hay-scented and the green *Asplenium marinum* (which first saw the light in a cave at Colonsay) are reminiscences of English lake and Western Island. One or two of them are already perfectly developed; others have only begun to stir the soil above their heads. But in each and all an inscrutable and irresistible force is at work, a power so potent that even the hard-trodden sod is moved aside by a slender needle-like shaft which the faintest breeze will bend—a miracle, indeed, before which science is mute. Thus writes a correspondent of *Good Words* for July, who must be at heart a gardener,

for all true gardeners prefer plant souvenirs to any other.

The Arum Lily—Although long in cultivation, this plant (*Richardia æthiopica*) still remains at once one of the most gracefully classical and effective of all decorative plants whatever. It is nearly hardy; in mild localities, or where it is planted in water over 2 feet in depth, perfectly so, but even in the coldest of gardens it is worth preserving indoors during the winter for the sake of plunging it out in shallow tanks or ponds during the summer months. Plants for early blooming in a warm greenhouse should now be separated into single crowns and planted out in a sunny position out-of-doors in a well-manured trench. So treated, strong flowering crowns are produced, which may be taken up and potted in October and removed indoors. Such plants may be bloomed almost any time, according to the temperature in which they are placed. To obtain large spathes, they should either be potted in loam and rotten manure, or be liberally supplied with stimulants in a liquid form. Starved plants in small pots will bloom at 1 foot to 18 inches in height, but well-fed specimens in large pots may be 6 feet high, with their spathes white as ivory and large in proportion. As a window plant it deserves notice. I know of two old plants of it which have been many years in the same window; they have woody stems 6 inches in height, and these plants are nearly always in flower.

Running to seed—"No," said an amateur the other day; "much as I love Canterbury Bells, they have a serious drawback to me. No sooner do their flowers expand than the July sun scorches them up, and as the plant runs to seed it becomes absolutely shabby." I am afraid this is a true bill on hot, dry soils. In small gardens, where only a few things are grown, it is easy to snip away the dead flowers, but in large gardens this is impossible. Here we find they flower well and retain their beauty long if grown under tree shade. We have many other flowers which spoil very rapidly if allowed to run to seed. Foxgloves and Delphiniums are well-known examples. The remedy is, as we have said, to cut away all decaying blossoms, and if this is done many plants otherwise most fugacious endure fresh and fair for weeks instead of days. Where the soil is hot and sandy, a mulching of well-rotted manure or Coconut fibre is useful, or even short Grass from the lawn-mower may be so utilised, and occasional waterings with liquid manure will then prove most effectual. One thing is clear, if plants are expected to keep on blossoming, running to seed must be prevented at all cost.

Rose Celeste—As seen side by side, no one could possibly confuse this variety with *Rosa alba* or the old Maiden's Blush. Just as I now write a friend sends me a big cluster of its deliciously perfumed rosy buds and broad glaucous leaves. What an exquisite Rose it is! and its rich fragrance is most exquisite also—pure and fresh as the attar of Cashmere! That this lovely old variety is not better known is little short of a calamity, seeing that but few other Roses in the bud stage are more lovely or so sweet. I must ask Mr. George Paul to assist us in looking up and cultivating all these lovely old-fashioned Roses when he can spare time, and then we must have a Rose conference, at which single as well as double kinds will have a place accorded them. I think I know half a hundred of these single and semi-double old-fashioned Roses, but none fairer or more deliciously sweet than this in its earlier stages of blossoming.

Alstroemerias—These showy Amaryllids are far too rarely seen in even the best of collections. Once well planted they are most luxuriant, but being tender they should have a warm position near plant-house walls, and if the natural soil is stiff and heavy, sand should be largely added. *A. aurantiaca* grows with us 5 feet in height, each leafy wand terminated by an umbel of ten to twenty vivid orange flowers. Pale yellow and tosy pink species are also very lovely on warm sunny borders just now, but none are so striking

as this orange-blossomed kind. For cutting they are invaluable, as they endure fresh for a long time in water indoors. I wish someone who knows these lovely blossoms well would write us a descriptive list of all the species, and tell us something of the numerous beautiful seedlings and hybrids raised years ago in Continental gardens. Here with us all the kinds we have seed freely and are easily increased in that way as well as by dividing their thong-like roots.

Big leaves.—Handsome foliaged plants if well placed and luxuriant in growth add immensely to the interest and variety of even the best of gardens. *Polygonum sachalinense* is now 10 feet high waving in the wind. *Saxifraga peltata* in a mass 6 feet across or more, each of its little umbrellas bronzed by the sun, is also a noble object. Its first cousin, *Rodgersia podophylla*, is even yet more effective and quite beautiful when its young foliage seems as if made of wrinkled bronze instead of delicate cellular growth. *Centaurea babylonica* and *Verbascum olympicum* are well worth a place for their woolly foliage, so also are *Ligularia Kämpferi* and *L. macrophylla*, while all the species of *Acanthus* are of noble port when well grown. Wherever old ruins abound a few masses of *A. spinosus* and of the larger-leaved *A. mollis* deserve a place amongst them. As twining plants *Aristolochia Sipho* and *A. tomentosa* suit well dead trees or trellis-work, and even the Crimean Bindweed (*Calystegia sylvatica*) is handsome as a fine-foliaged plant, apart altogether from its great white trumpet flowers. VERONICA.

KITCHEN GARDEN.

MARKET PEAS.

OF the many crops grown by market gardeners Peas are one of the most uncertain; they oftener fall victims to climatal influences than any other commonly grown vegetable. This is especially true of early crops, of which nothing can with certainty be said until they are quite ready to gather. But the prices sometimes realised for early Peas are so tempting as to induce growers generally to annually incur the risk which their culture involves, and when a man has any large area of ground to fill up, the complete or partial loss of a few acres is not so great a matter; as the ground is cleared early and can be used for other things that same season, it is naturally in the interest of him who grows Peas largely to begin the season as early as possible. This has been a bad year for early Peas, cutting winds and frosty winds accompanying the flowering season to the extent of almost or quite ruining them in many places. Where anything like a crop was secured it was a profitable one, and I hear of as much as £16 per acre having been given. This is a good price and yields a handsome profit to the grower, but it was far otherwise in many cases, the crop being scarcely worth picking. Taking the Pea season as a whole, it must be termed a bad one, the frosts and unkind weather having crippled both early and late-sown crops to a considerable extent, and the prolonged drought forced them along in many cases to premature ripening and caused such a glut as to bring the price very low. Some growers in this district market their own Peas, but in the majority of cases they are bought on the ground by dealers, and one of these told me lately that he lost £40 by one lot he bought. "You know," he said, "there is a good deal of hit or miss with us; sometimes we make a good bargain, at others we lose money;" and then he told me of a crop of Day's Early Sunrise, which ran out to seventy sacks to the acre, a really extraordinary crop, and from which £19 per acre was cleared, free from all expenses. This Pea is finding much favour now, as it fills out the last formed pods, and branches and bears near the ground—points in which many otherwise excellent kinds are deficient. But questioned as to what he should consider the best Pea for general purposes, the individual above referred to unhesitatingly replied, "Kentish Invicta, the best market Pea grown, because it fills very well and keeps good in colour."

THE SOIL in this neighbourhood is too light for late crops; they can only be grown on deep, rather holding loam, but it suits early and mid-season ones admirably. In about a fortnight gathering will be at an end here. A good crop has been worth about £7 an acre, which is not a bad price, but which is unfortunately reduced by years of partial failure. One fault that many make who should know better is in sowing too thickly; the rows are often not more than 18 inches apart, so that in a good growing time they grow into each other, and by their very luxuriance deprive the pods of the power of swelling up as they should. A field belonging to a friend of mine afforded this year an illustration of the folly of sowing so thickly. The rows were set 2 feet apart, and as the fore part of the season was so dry and ungenial, the fields presented a very meagre appearance, and it was thought that there would be but a thin crop. But I thought differently, and I made the observation that in the case of garden Peas one would never think of putting the rows so close together as to risk their being crowded. Why, then, should field Peas be an exception to this rule? for although allowance might of course be made for the extra amount of light and air which a field crop enjoys over those in the confined precincts of a garden, they ought, nevertheless, not to quite touch in the rows. The result has proved the truth of my reasoning, for a change of weather occurring, the plants nearly filled up the allotted space, and one of the pickers told me that he scarcely ever saw a better crop. Now, if they had been sown 6 inches closer in the rows, they would have grown into one another, and the lower pods would have been smothered before they could have filled. Another rather important detail appears to be the "laying" of the haulm when about half grown. This operation consists in bringing the haulm over to one side, so that it lies all in one direction and to a great extent covers the ground. The advantages claimed are that the haulm, by covering the soil, acts as a mulch to its own roots, and that the plant generally is better enabled to profit by favourable climatal influences.

THE GATHERING is done by regular "Pea podders." These "podders" suddenly make their appearance on the approach of the Pea season. Where their home is, if they have one, and what they do in winter is a mystery. They migrate in families, either singly or two or three together. They pick by the bushel, and as every child works as soon as it can walk, they in a general way can earn good money. One of them told me that in a good crop he had picked as much as a bushel an hour the day through. A great difficulty experienced with these men is to keep them regularly to their work, for as soon as they have a few shillings in hand they are apt to frequent the next public house, not returning to their work until their funds are again at vanishing point. This sometimes occasions considerable loss, as in a hot time and when the crop is fully grown it will seriously deteriorate in value in the course of a few days; and as the price varies from day to day, a good market may thus be lost or only partially taken advantage of. From 6d. to 1s. a bushel is given for picking, the lowest price being that given for ordinary fine mid-season crops, 8d. being the ordinary price when the crop is somewhat thin. It is only in the case of early crops, when the produce is valuable and naturally not so much of it, that 1s. per bushel is given, but a good crop at 6d. is that by which the most money can be earned. As before mentioned, it is only on rather retentive soils that late crops of Peas should be sown; where the natural staple is light it is folly to do so, as the haulm becomes dried up before the half of the pods are swelled up. There is a large grower in this neighbourhood who holds some 700 acres of land, but who has quite finished gathering; and, indeed, there are few late Peas grown about here, as it is only here and there that the soil is of a holding nature. The kinds mostly favoured for late crops are the Fortyfold and Yorkshire Hero. At one time Champion of England was the main crop Pea here; now one rarely sees it, and yet I am told by those who should

know that it is not to be beaten in a general way. J. C. B.

Perfect Marrow Pea.—Mr. House, of Peterborough, has sent us a sample of this Pea, which seems to be a very good one. The pods, though not very long, are uncommonly well filled with Peas of large size and good colour. They were gathered from the open field, where they have been grown without extra manure and without stakes. The parents of this Pea were Champion of England and Ne Plus Ultra, and it has the early qualities of the Champion and the fine colour and flavour of Ne Plus Ultra.

Onion fly (*Aeon*).—Your Onions are attacked by the grubs of the Onion fly (*Anthomyia ceparum*). Take up very carefully with a spud or trowel all the infested bulbs and destroy them by burning them or burying them deeply. Be sure you do not have any of the grubs in the ground. As there is more than one breed of this insect it is very important to prevent the grubs undergoing their transformation. The Onions which are attacked may easily be known by the leaves flagging and turning yellow. Watering once or twice with soap-suds or one part of paraffin oil to 16 parts of water kept well mixed has been found very useful. In dry weather use rather less oil to prevent burning the plants. Water the bulbs without a rose.—G. S. S.

"Roguing" Potatoes.—We find it necessary in order to keep our stocks of Potatoes pure to go over them when in full growth and clear out any that are not true; this we have to do about once in three years, and even with this care we find more rogues than we like to see. There is very little difference in this matter with regard to varieties; if the stock is examined when growing there is sure to be some found that have run away from the original type. If we had not adopted this plan many years ago, our old favourite variety of Ashleaf would by this time have been unrecognisable. Now, although it has been grown in the same garden for thirty years, it is as true in character as it ever was. We keep it true by digging out such as show any divergence from the type.—J. C. C.

Dried herbs.—This is the proper time to harvest a full supply for winter use. Most of the kinds of garden herbs are now coming into flower, and they are then at their best for drying. A rather cool, airy place is best for the latter purpose. Cut them when dry, and spread them out on the shelves of the Apple store or in any similar place until they get thoroughly dry; then tie them up in bunches, and hang up in an open shed where the fresh air can circulate freely around them; if in a confined atmosphere they soon get mouldy in damp weather. Such varieties as Sage, that can be had in a fresh state at all times of the year, are not so much prized in a dried state as the herbaceous kinds, but it is a good plan to provide a store of all sorts now that growth is abundant, and when the cutting off a portion of it causes a succession of young fresh leaves and shoots to push out, thereby keeping up an unfailing supply. Such kinds as Sorrel, if allowed to get seedy, take a long time to produce a fresh supply of green leaves fit for use, but by cutting over a few plants every week during the growing season there need never be a scarcity.—J. G. H.

SHORT NOTES.—KITCHEN.

A good forcing French Bean.—Anyone who has not grown Ne Plus Ultra would do well to give it a trial. It has done remarkably well with me, coming into use within seven weeks from the time of sowing, and keeping longer in good condition than any other Bean with which I am acquainted. It is very prolific and good in habit.—T. WOODFIELD.

Diseased Onions (*C. W. H.*).—The plants are attacked by one of the mildews peculiar to Onions, named *Peronospora Schleideniana*, often common in dry, hot weather, spring-sown plants being most affected. Cures are unknown; careful trenching and earthing and autumn sowing are said to be preventives. All diseased material should, if possible, be burnt.—W. G. S.

COVENT GARDEN A NUISANCE.

THERE was once a time when Covent Garden was a fashionable resort. Its coffee houses were affected by men about town. Its hotels were the dearest and the most exclusive; and under its colonnades ladies used to promenade as they do now by the Serpentine, and shop as they do in Bond Street. All this we know from old prints and other contemporary records. Even in times comparatively recent—let us say sixty years ago—Covent Garden had not commenced to be a public nuisance, and in the Garden itself and in the adjacent streets were to be found some of the best shops and the oldest firms in London. The down fall of the neighbourhood is not to be explained away by the familiar story of the tide of fashion setting towards the west. During the same period there have been, of course, immense architectural alterations between the site of Temple Bar and the commencement of Cockspur Street; but the general character of the Strand has altered very little. It still does very much the same kind of business, and is visited for the same purposes and objects. But from the district that surrounds Covent Garden the old occupants and those of their class have been driven away. Nobody lives there, or stops there, or carries on business there, if he can possibly help it. It is, indeed, not too much to say that the Duke of Bedford's overgrown market will ruin, if it has not ruined already, almost the entire district bounded by the Strand on the south, Drury Lane in the east, Long Acre on the north, and St. Martin's in the west.

To judge of the extent of the evil, one must visit Covent Garden on a market-day—Saturday preferably. Soon after midnight heavy vans begin to roll in. They have come from all the home counties, and many of them have been journeying the entire day. They are filled with huge crates, hampers, and baskets. Some of them are wheeled up against the kerb. Others unload at once. As the small hours creep on the traffic increases. You wonder where all the vehicles can possibly have come from, and how their contents are to be disposed of. Minute by minute the arrivals multiply. At first only the Market itself is occupied, but before sunrise Henrietta Street, James Street, Russell Street, and Southampton Street are all blocked. Their whole roadway is occupied up to the footpath on each side. Meantime the crowd of porters and runners grows thicker and thicker. The two outer arcades are completely filled up with tier upon tier of loaded boxes and baskets. There is just a narrow gangway on each side, through which salesmen and purchasers can elbow their way. It is an interesting sight, and at first a pleasant one. One moment you pass an immense consignment of Strawberries, and the very air that you breathe is loaded with the fragrance of the fruit. Then you come across large boxes of cut flowers, the heavy scent of which hangs round you like the exhalations of a perfume factory. In endless confusion, filled everywhere about, lie Bananas in their strange clusters, huge wrinkled Melons, downy Apricots, and bright Tomatoes, neatly packed in rows, barrels of Potatoes, stacks of Cabbages and Cauliflowers—stacks that would literally fill a room—and an illimitable profusion of the commoner English fruits. But by this time the Market itself—that is to say, the central building—is stored till it can hold no more, and the roadway and pavement that surround it are besieged. Wherever wares can be deposited they are put down, and as the railway vans begin to come in with the produce of the early trains there is an absolute block. It is almost impossible to describe the scene, and it is difficult to realise how the work is got through. The porters, however, are very numerous; they know the Market thoroughly, and fruit is a light burden. Incidentally, I should wish to say a word for the Covent Garden porters, and, indeed, for all those who do business in the Market. The manners of Billingsgate are lawless and aggressive in the extreme. A Billingsgate porter will tread on your toes, or drive a case of fish against you, or knock off your hat and trample on it, out of pure wantonness. Respectable and inoffensive people visiting the

place out of curiosity will be hustled and even pelted with offal. The dialect in use is proverbial. Its manners are open to objection. Billingsgate, in short, is a land of the Cyclopes. Covent Garden, by comparison at any rate, is a land of the Phæaciens. Perhaps something is due to ducal influence. Perhaps traffic in fruit and flowers may have a humanising influence. Anyhow, you are treated courteously, and need not hear bad language unless you go in search of it. Indeed, as soon as the congestion has passed its worst, one may see women singly or in groups making their domestic purchases, and shop girls on their way to business bargaining for a flower.

All this, however, is the prettier side of the picture. It is pleasant to enjoy the sight and smell of fresh flowers and fruit, and to see people busy, certainly cheerful, and apparently prosperous. But the condition of the streets and thoroughfares round about the Market is another matter. Horses stand there in the carts for hour after hour, and the roadway and pavement are covered with mire and litter and refuse of every kind. Under foot is an indescribable compound reminding you at once of the stable, the piggery, the dust-bin, and the manure heap. Here and there the horses are fetlock deep in this unsavoury filth. Everywhere the footpath is dangerous. On rainy or foggy days the state of things is beyond description. On hot days the smell is intolerable. There is nothing so sickly or unwholesome as the smell of decomposing vegetable matter, and under a warm sun bruised vegetable refuse decomposes almost immediately. Soon after sunrise on a hot day, such as those we have lately suffered from, the streets round the Market and the Market itself smell as we are told only a Turkish bazaar can smell. Every imaginable odour seems to be combined, but the one that prevails above all others is that of sulphuretted hydrogen, which is produced by rotting Cabbage leaves in far more liberal volume than by stale eggs, and is of all common gases perhaps the most deleterious.

The complaints of the inhabitants are uniform and very freely expressed. In the first place they find their business affected by the block of traffic. On busy days carts will be standing as far as Garrick Street, Long Acre, and Drury Lane for hour after hour, utterly unable to get near the Market. It is not until noon, or even later, that the streets are passable. Thames Street on Monday morning is not worse than Russell Street, Catherine Street, and Drury Lane on a Saturday. The obstruction is, perhaps, at its height between nine and ten, but it lasts with more or less severity till late in the afternoon. This, of course, is most injurious to trade, to say nothing of inconvenience and annoyance. Secondly, I was assured—and I could easily believe it—that in summer the whole neighbourhood is unhealthy, and that the children more especially are always ailing. Lastly, and very reasonably, the inhabitants object to have market *ouvert* held on the pavement in front of their houses—for Covent Garden, be it understood, is by no means limited to the square itself. In the square there is simply not room for the traffic that has to be got through. It flows over into the adjacent streets, and the whole area is one vast fair. In one place rows of women are seated on the pavement, making up flowers into bunches. In another the footway is obstructed by hampers of garden produce, over which buyer and seller are higgling. Even on a first visit the picturesqueness of the thing soon wears off. It becomes tedious and monotonous. To those who are compelled to endure it day after day it must be intolerable. We are told, of course, that as soon as the work is over the refuse is all carted away and the streets thoroughly swept and cleansed. This is true, no doubt. But, practically, it is not till late in the afternoon that the real business of the market is over and order is restored. Then the fashionable world goes to buy hot-house fruit and choice exotics at fabulous prices in the central arcade, or to give many times their value for Ferns and Japanese goldfish and little green lizards and piping bullfinches. All is now quiet, and cool, and pleasant. The place is transformed as if by

magic. A duke might reasonably be proud of it. In the morning I declare unhesitatingly that it is a place of which all those who are concerned with its management and administration ought to be heartily ashamed.

The reason of all this is sufficiently obvious. The Market is not large enough. But it is practically the only market of its kind, and the revenue from its tolls more than compensates the duke for the inevitable depreciation of the adjacent property. Were it forbidden to levy toll except in the Market itself things would, one inhabitant assured me, be better. But the property is the duke's. He chooses to treat his market as if its area were indefinite, and there is nobody to interfere with him. The people who suffer most directly are, with very few exceptions, his own tenants, and his influence is everywhere perceptible. I called the attention of a sergeant of police to a van which had been standing in Southampton Street for three hours. "You see," he explained, "it is here to unload." I suggested that a van would not be allowed to stand for three hours in the Strand. He admitted that the Strand "was different." "But here," he said, "it always has been so, ever since I knew, and I suppose it always will. Who?"—and here he lowered his voice—"is to interfere with the duke?"

As I plodded about under the scorching sun, through mud and slime and putrid market stuff, and filthy smells, as I saw the roadway blocked in every direction, the pavement greasy, and the worn-out horses waiting wearily, I somehow kept on mechanically repeating to myself, "Who is to interfere with the duke?" I emerged into the Strand. There the pavement was clean and bright, the roadway in good order, and the ceaseless flood of traffic under perfect control. And again I seemed to hear the sergeant ask, "Who is to interfere with the duke?" To anyone ignorant of our ways it would seem monstrous that in the very heart of London one man should be able to make a whole district unwholesome for the best part of a day, to stop its traffic, to monopolise its streets and pavements, and to derive an immense income from what is most emphatically a public nuisance, and, more, a public danger. It is difficult to see why Covent Garden should be where it is. But one thing is clear. Were it the size of the new meat market in Farringdon Street it would even then be only equal to the traffic now forced into it; and were it in the hands of a few small speculators it would most undoubtedly be dealt with as a public nuisance, which it is.—*Times*.

* * The best way out of the present state of things seems to us to be the creation of a vegetable market elsewhere, confining Covent Garden to fruit and flowers. There are some fine open spaces not far removed. Why not a night and early morning market on the Thames Embankment?—*Ed.*

NOTES FROM THE CONTINENT.

GARDENING IN ITALY.—Near the little village of Sant Oso, which lies at the foot of the Mont Sumano, one of the most interesting localities in Europe to lovers of alpine flowers, a horticultural establishment has been founded which promises to exercise a most important influence on gardening in Italy, and which may render good service to horticulture generally. Senator Rossi, an enthusiastic amateur, conceived about a year ago the idea of creating a pomological school, but, not content with this, he has extended his operations so as to embrace fruit, flowers, and vegetables of all descriptions. The amount of land devoted to this purpose is about five thousand acres, the whole of which is encompassed by walls, and which is divided into two portions by one of the principal roads of the district, and is so near a railway that a special branch from it will be brought into it, which in the case of such an extensive area will naturally confer great advantages. Nothing, indeed, seems to have been neglected to render this model pomological and horticultural farm, as the founder terms it, a success. Thus there are houses for the workmen, covered places for soils and

manure, immense reservoirs for water, glasshouses of all kinds, including an extensive range for Grape forcing, all communicating with each other, and so arranged that the workmen never need go into the open air, with a complete system of heating and water laid on, a chemical laboratory, museum, class rooms, semi-subterranean rooms for preserving fruits and vegetables, extensive piggeries for making manure, a complete system of irrigation, the ground being portioned out into squares of 3260 feet, divided by roads, along the borders of which flow streams of water, and which form highways, thus dispensing with the vehicles usually employed for purposes of transport. In addition to this the electric light is being fitted up in every part of the grounds, so that any kind of work, such as transplanting, which it would be difficult to perform satisfactorily in the daytime, may be accomplished at night. The whole of the soil has been trenched to the depth of 1 yard, more than one thousand workmen being employed thereon. Amongst the principal features of this truly gigantic undertaking may be mentioned 8000 square yards of walls furnished with fruit trees and provided with shelter against spring frosts, 1500 acres of eating Grapes, which a reservoir containing 1200 cubic yards of water and the continual flow from Mount Sumano guarantee against drought; a vineyard containing 50,000 Vines, a fruit garden of 30,000 trees, a trial ground of 200 acres, and some 300 acres of Asparagus. Accommodation is also provided for ninety pupils clothed in uniform, some of which will be maintained at their own expense, whilst others will receive a subsidy from the various communes and provinces of which they may be natives. So far as I am aware, this "garden farm" will for size and completeness of design have no counterpart in Europe, and it is to be hoped that the energy and skill displayed in its formation will meet with the reward it so richly merits.

HARDY MELONS.—"J. S. W." is right in surmising that the Melons commonly grown in France are of a hardier nature than those in favour in this country. The hybrid kinds so much grown in England would be of but little use for open-air culture in France, where, although the climate is favourable to this fruit, it naturally has to combat more unfavourable conditions than under glass. The kind mostly grown for market purposes is the Prescott. It is a large Melon of rather fine appearance, and it is mainly on this account that it is valued, as it forms a large number of seeds, the eatable portion not being in proportion to the size, but the French are no wiser than we are in that respect; they please the eye before the palate. Another point in favour of this variety is its thick skin, for Melons have to bear an amount of rough usage in France to which they are strangers with us. Perhaps no fruit, not even excepting the Grape, is so popular with the French as the Melon, and one of the strangest sights to an English gardener is the waggon-loads of Melons brought into the provincial markets and fairs of Northern France. At these fairs, which last many of them from a month to six weeks, many thousands of this fruit are sold at so low a price as 3d. each, but, considering the heat of the climate and the luscious, refreshing, and at the same time satisfying, nature of the Melon, there is no wonder that it should find favour with the thirsty workman, who perhaps toils some fifteen hours in the close vitiated atmosphere of a workshop or factory. A fact probably new to many of your readers is that the French generally flavour their Melons with salt and pepper, and a real Melon lover will gravely assure you that this is the only and true way of bringing out its flavour. A Melon eaten in any other way than this is not what it should be. Another variety much grown is the Brod   h  tif, a netted red-fleshed kind of medium size, but of free growth, and bearing most freely. I have grown this on a south border in spent hotbeds, planting out in May under cloches, and have had as many as twenty Melons ripe at a time. But the hardest and most universally popular kind is the Noir de Carmes, very productive and good flavoured,

and easy of cultivation. This is mostly grown in private gardens, the flesh being orange-coloured, melting, juicy, and delicately perfumed. In favoured districts of the south of England this Melon would probably, in fine summers, succeed in the open air, especially if a start were given it by means of a gentle bottom heat when planted out in May.

CUCUMBER CULTURE IN BELGIUM.—It is only on warm soils that Cucumber-growing is attempted in the open, warm borders being chosen by preference. In default of these, raised beds are thrown up somewhat rounded towards the middle, so as to ensure the roots against stagnant moisture and to better enable the sun to thoroughly warm the soil. A drill is drawn in the middle of the bed some 4 inches deep, and this is filled with liquid manure, and the following day the drills are half filled with soil and the seeds sown therein, covering them lightly. This is the plan generally followed in the case of seeds of a light description, but when of a cold moisture-holding nature, the liquid manure gives place to a couple of inches of thoroughly decomposed manure. When well started into growth the plants are thinned out to about 8 inches apart. So that the beds may be well and regularly covered with vine, the plants are trained alternately to the right and left, being stopped when they have filled half the space allotted to them. In this manner crops in favourable years are obtained, but Cucumber culture in the open is, although not so hazardous as in this country, necessarily somewhat uncertain, but a good crop probably pays better than almost any other that can be grown on the space.

GERMAN GARDENS IN SPRING AND SUMMER.—Those who may have passed a winter in Germany will have remarked how bare and devoid of warmth and colour the gardens are at that time. It is true that there are a few Conifers which thrive fairly well there, and one seldom enters a garden of any size without seeing some good specimens of the sombre Norway or the white Spruce, but we miss there the rich hue of the Rhododendron and lose the pleasing variegation of the Aucuba and the lively tints of such graceful Conifers as Lawson's Cypress, the Decdar, and others. There is sadly wanting that variety of form and colour so characteristic of a well-planted English garden; but many would think that this deficiency was atoned for by the wealth and variety of bloom during the late spring and early summer months. A walk through any of the public gardens at that time is a treat, for naturally German gardeners cherish and endeavour to develop the capabilities of such ornamental trees and shrubs as can be depended on to withstand their climate. Moreover, as a compensating advantage, it would seem that flowering trees and shrubs generally bloom with greater prodigality and attain larger dimensions than with us. Deutzias, Weigelas, Philadelphuses, Lilacs, Prunuses, Thorns, &c., display such a lavish profusion of flowers as one does not often see in our own gardens. The greater heat in summer and the fine clear autumn is probably the cause of this greater floriferousness; but we should do well to imitate the Germans in their love for such things as fear not winter's icy blast, and which, ever vigorous and enduring, yearly delight us with their pretty flowers, and which, needing little or no care, but seldom disappoint our expectations. Extensive shrubberies and woodland walks, now too often occupied with a tangled mass of the commonest trees and evergreens, might be beautified by a more free use of those numerous flowering trees and shrubs, so many of which appear to be scarcely known to the majority of English gardeners.

J. C. B.

Narcissus traffic—buyer, beware!—The rage for this family is by no means an unmixed good. Already our lanes and orchards show the effect of the indiscriminate raid which has been made upon them. Thousands of Lent Lilies are annually bought, mostly by dealers, comparatively few being for private gardens direct, and in the majority of cases these are, I fear, planted in

cultivated ground—only to die. It is not, however, this evil, great as it is, which suggests my present communication. The point to which I would direct attention is, that dealers would do well to purchase only of owners or occupiers, and scrupulously to employ their own men in collecting the bulbs. Under the present system the roots are supplied by irresponsible parties, and the result is wholesale plunder, not only of the fields and lanes, but of private gardens. Thus it may happen that a dealer unwittingly receives back, as the result of robbery, the identical bulbs which he has a few months previously sold to one of his customers. Not many nights ago such a raid was made upon my grounds; patch after patch of garden varieties was taken, evidently by practised hands. For a moment they were deceived by the decayed foliage of Colchicums and Irises, but these were promptly discarded and left behind. Liliun Szovitzianum, however, was too much for their virtue, even on the Sunday morning when the robbery took place, and it shared the fate of the Narcissus, and was transferred to the collector's sack.—T. H. ARCHER-HIND, *South Devon*.

OBITUARY.

We have to record the death of Mr. EWING, long gardener at Bodorgan, Anglesey, and the inventor of glass walls, which at one time were thought to be a step in the right direction; but which after trial were abandoned as useless. He died from failure of the heart's action at the age of 67.

QUESTIONS.

5217.—**Lime water.**—Will some Orchid grower kindly say if lime water may be used for the destruction of small flat snails, and not also destroy the Orchids which are infested by them?—S. N.

5218.—**Celery fly.**—Our Chrysanthemums are being attacked by the Celery fly or grub; can anyone kindly inform me of any remedy other than picking off the affected leaves and burning them? Would dusting with soot stop its ravages?—G. C.

5219.—**Variegated Thistles.**—Amongst a packet of seeds presented by the editor of a French paper to his subscribers is the Chardon, a handsome variegated Thistle. Will any reader of THE GARDEN say, as a vegetable, how it is to be used?—M. L. W.

5220.—**Diseased Melon stems.**—The stems of my Melons are decaying at every joint from which I have removed the largest leaves. I should be glad if any experienced grower of Melons would tell me if I have done wrong in cutting the leaves off the stems that bore the fruit. What is the cause and cure of the evil.—W. S.

5221.—**Chrysanthemums in small pots.**—I bought some Chrysanthemums last autumn in 6½ inch pots, in which they flowered. This spring I cut them down, also cut the roots, and repotted them in the same pots; they are looking well. Would they answer in the same sized pots another season, or not? and what size, if larger?—MYRTLE GROVE.

5222.—**Abies Douglasi Stairi.**—Is this variety of the Douglas Fir raised some years ago at Castle Kennedy doing any good in the south? I have some good plants of it about 8 feet to 10 feet high which have been in great beauty for some weeks—a perfect sheet of white; the colour is, however, beginning to go off a little now.—W. H. M., *Munkeas, Dalbeattie*.

5223.—**Garden reclamation.**—Will someone kindly give a few hints as to the best means of stocking a front garden overshadowed with heavy trees and facing the north? There is Grass and a border, now a mass of Bracken and weeds. Is there anything hardy that would climb to give a little colour to the Ivy? It looks so gloomy and wretched. Also wanted suggestions for rapid climbers for a south oriel window. I have only got the place for three years; I should like to put Roses, Clematises, &c., over all unsightly walls, but do not know what to get. Any suggestions will be welcome.—AMATEUR.

Names of plants.—A. J. H.—1, *Philomelis fruticosa*; 2, *Watsonia Meriana*; 3, *Campanula Scheuchzeri*.—*Lavrenny*—Appears to be *Oncidium carthagenense*; your example of erect and drooping flowers on the same plant an uncommon occurrence.—H. Henderson.—*Lilium testaceum*.—K. A. S.—*Lysimachia clethroides*; *L. ciliatum* (yellow); *Campanula pusilla alba*; apparently *Allium carinatum*.—J. N.—1, *Fuchsia procumbens*; 2, *Coccoloba platyclada*; 3, *Cheilanthes hirta*.—*Constant Leader*.—1, *Selaginella Kraussiana*; 2, *S. Kraussiana aurea*; 3, *Selaginella Mertensii variegata*.—Mrs. Bolley.—*Galega officinalis*.—T. W. O.—We were unable to name the specimen you sent two weeks ago.—J. W. K.—1, *Brodiea grandiflora*; 2, cannot name without flowers, possibly a *Narthex*.—P. O.—*Campanula barbata alba*; *Senecio abrotanifolius*.—*Bittern*.—*Phyteuma orbiculare*.—S. K.—1, next week; 2, *Gnaphalium supinum*; 3, *Callitriche platycarpa*; 4, *Lamium incisum*; 5, *Crataegus tanacetifolia*.—R. R. W.—2, *Lilium colombianum*; 3, *Chenopodium album*.

No. 662. SATURDAY, July 26, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE." *Shakespeare.*

TOO MANY FLOWER BEDS.

How seldom does one find a good spread of velvety turf undisturbed by flower beds, more or less intricate in pattern, in many cases suggesting the idea that the object in view has been to find how many beds could be crowded into a given space. I have lately seen some examples of an opposite character in both large and small gardens. In the former, what above all else arrested attention was a charming expanse of green turf from which majestic trees rose in stately grandeur, their lower branches resting on the Grass, yet there was no lack of flowers, for around the mansion large masses of gay colours charmed the eye, and the contrast helped to heighten the effect of both the flower and flowerless portions. One cannot have too many flowers, but we certainly do not want them dotted over the whole place, and the worst of it is that owners of small gardens copy implicitly examples, good or bad, which they find in larger ones. Happily, the latter are becoming improved. In villa gardens if the Grass be cut up into fragments, the most enjoyable portion of them is practically lost and their apparent size considerably reduced. I lately came upon quite a small town garden in which the owner had wisely massed his flowers by the margin of the one walk that surrounded it; the centre was an unbroken Grass plot, green through copious waterings during the late drought. An ancient Apple tree gave shelter and shade in summer, a wealth of rosy blossoms in spring, and useful fruit in autumn. The turf formed the most enjoyable resort both for young and old, and the enclosing walls, a necessity in town gardens, were aglow with various flowering climbers, while at their base was a wide border for hardy flowering plants. This was a garden, which, though small, was enjoyable. As a rule, we get too much gravel, bare earth, and edging tiles. What we want are flowers concentrated, and the Grass as much unbroken as the space at disposal will permit. J. G. H.

CERTIFICATING PLANTS AT SOUTH KENSINGTON.

A STRANGE inconsistency seems at times to influence the body of experts appointed to award the certificates to plants at the Royal Horticultural Society's meetings at South Kensington. It sometimes happens that a plant of sterling merit is passed over with scarcely a remark; at other times a plant of unproved merit is honoured with a first-class certificate, simply because it is new, or because the major portion of the committee have a particular leaning towards the class to which the plant belongs. At the meeting on Tuesday last one of the plants certificated was a little Primrose, a native of North America, named *Primula Rusbyi*. On the label it was stated by the exhibitor that he received it only three weeks ago, and that consequently the plant could not be expected to be in good condition, nor was it, as anyone present could see. It was a weak plant which had made an effort to send up a few flowers which, though

pretty, were not nearly so effective as those of many old species. That this particular *Primula* was certificated is not a matter for serious complaint. The fault lies in the rule which the committee would seem to have set up not being carried out consistently. For instance, side by side with this Primrose was a new *Cattleya* named *Gaskelliana*, undoubtedly a variety of the highest merit and of great value, on account of its time of flowering filling up a blank in the *Cattleya* season. Two plants of it were shown and both were certificated; moreover, a white variety of the same *Cattleya* was certificated on the last occasion. Now the point is that this same *Cattleya* was exhibited last year as fine as could be seen by Mr. Thomson, of Clovenfords, but because it was new and the committee did not happen to know it, it was overlooked, some members of the committee going so far as to say that it was but a mere variety of *C. Mossiae*. These are but two instances of the inconsistency, of which complaints are justly made. If these certificates are to be of any value to the outside public as a means of determining plants of merit, surely a little more deliberation is necessary on the part of the floral committee.

TREES AND SHRUBS.

NOTES ON TREES AND SHRUBS.

As the planting season is again coming round, a few notes on some ornamental trees and shrubs suitable for pleasure ground and park decoration may prove useful. Planting may be done from October till March, but I would prefer the first or the last of the months named, as the weather is generally changeable and trying during the shortest days; I know, too, from experience, that planting between intervals of frost is often injurious to the plants. In dealing with a quantity of trees, I planted part of them in favourable weather in October with the best results; others, again, were put in in January, and much loss occurred; while with the remainder, planted in March, I had greater success. Much, however, depends on the subjects operated on and their condition. Small plants of the hardiest kinds are not so easily killed at any time; but large tender ones have to be dealt with most carefully. In established places there is often a good deal of transplanting and thinning out to do at various times in a number of years, and by doing this at the proper season, very large plants may, as a rule, be shifted without injury; but it is a mistake to buy very large plants at a distant nursery in the hope of securing immediate effect with success. I am referring now to such plants as large Hollies, evergreen Oaks, and evergreens generally. Large deciduous trees can, as a rule, be more successfully transferred than evergreens. In

LIFTING any kind of tree, especially when the leaves are on it, the roots should never be divested of soil; on the contrary, as good a ball as possible should be retained. Where trees are treated as in properly conducted nurseries, the roots can always be had in a compact ball; being often lifted and transplanted when young, the roots become matted in a very confined space, and plants of this kind may always be moved with safety. Crowding the roots into a small hole is a great mistake. This may not kill the plant outright, but it will check it for years to come. When lifted, the roots should never be long exposed to the influence of sun or wind. This is one of the very worst things that can happen to them, and should be strictly avoided. When plants are brought in from a nursery, it is, of course, impossible to plant them all at once; but the first attention they require is to cover up the roots with damp Moss, straw, or soil. As to pruning and cutting generally, the period named in which planting may be done also answers for these operations. We begin cutting our bushes in October, and go on from time to time as the

weather and other work will allow until March. That this time is right we have annually ample proof in the luxuriant manner in which the trees grow afterwards. It is only hedges, Laurel banks, and upright growing bushes near the edges of walks on which we use the shears, the knife or bill-hook being the favourite for all natural-growing bushes. As regards

THE VARIETY OF TREES and shrubs suitable for gardens, page after page might be filled with names without exhausting the subject, but I will just direct attention to a few. *Wellingtonias* should only be planted sparingly and in sheltered places. Here we have them 70 feet high, with stems 14 feet in circumference, and we have others in a small state planted by the hands of royalty to commemorate a State visit. In each case they indicate a suitableness for large spaces. The variegated form of the *Wellingtonia* is pretty, but not so free in growth as the type. With this tree, as in the case of all other outgrowing and spreading conifers, it is a mistake to plant it too near the edges of pathways, as they soon interfere with the traffic, or have to be cut, thus spoiling their symmetry. The *Araucaria*, or Chili Pine, is a tree prized by many, and it is alike suitable for the villa front or park. We have sometimes seen it planted in woods where only its top could be seen from an elevation; but in such places it is lost. It is only seen to advantage when isolated. It makes a noble specimen on a lawn, and it should be planted in rich deep soil, as in poor material it loses its bottom branches and becomes unsightly. Spruces of different kinds require plenty of space in which to develop their beauty and true character, and they are thus unsuitable for small gardens. They, however, become grand trees when planted singly in favourable situations; the best of them are the white Spruce, *Abies Douglasi*, *canadensis*, *orientalis*, *nigra*, and *Morinda*. The Cedars also require much space in which to grow out properly, and where this can be given them they are well worth attention. The *Deodar*, the silver or *Atlas Cedar*, and the *Cedar of Lebanon* are valuable and good kinds. In the *Biotas*, or Chinese *Arbor-vitae*, we have a grand class of beautiful shrubs, suitable for gardens of all sizes. *Orientalis*, *orientalis aurea*, *orientalis elegantissima*, and *orientalis semper-aurea* are the choicest varieties. *Cryptomeria japonica* and *C. elegans* are both ornamental, and may be planted in large or small grounds. The largest tree of elegans here is 30 ft. high, and about as much in diameter, but it has now several leaders, and as the branches are bending down and growing outwards, we do not anticipate that it will grow much higher. As it is, however, it is most attractive, and it will succeed either inland or near the sea. Some fine plants with which I am acquainted grow in the strongest sea air. Amongst

CYPRESSES are some of the handsomest of all conifers, and they do remarkably well in all climates and situations. The best known of them is *Cupressus Lawsoniana*, a most elegant and graceful Cypress; and *C. erecta viridis*, *C. macrocarpa*, *C. sempervirens*, *C. erecta lutea*, and *C. erecta elegantissima* are all choice sorts. The two last-named are new and very attractive. *Semper-virens* forms an erect and conspicuous object. Of Junipers, the Chinese variety is perhaps the best known; it is not only useful for planting here and there on lawns and about shrubberies, but it is also serviceable for forming edges. *J. communis* is commoner. The *chinensis aurea* is a beautiful golden-leaved kind; *Sabiniana* forms a low-spreading bush, and *virginiana* is often termed the red Cedar, owing to its rich colour. In the *Picea* tribe we have some grand forms of trees, and the best-known type of these is probably *P. nobilis*, one of the best of all Firs. They require plenty of room in which to develop, and are well worth every care. *P. amabilis*, *P. grandis*, *P. magnifica*, *P. Nordmanniana*, *P. Pinsapo* all form magnificent trees. Amongst the *Pinus* we have a class more noted for producing valuable timber and affording cover and shelter than forming handsome landscape objects. *Pinus austriaca* is a very hardy variety, and one which will succeed on land bor-

dering the sea. *Pinus Laricio*, or Corsican Pine, is the red deal of commerce. Of *P. Cembra* we have some good specimens here, as well as of *Strobos* or Weymouth, and insignis. *Thuja*s are favourite subjects for small gardens; they grow compactly, and make attractive bushes when quite small. *T. gigantea* grows very tall, but *Lobbi* is dwarfer and more ornamental, and should always be selected in the first instance. *Plicata* is the dwarfest of them all. Closely resembling these in many respects are the *Thujopsis*, or broad-leaved *Arbor-vitae*s, among which the best are *borealis*, *compacta*, and *dolabrata*. These, as well as the American *Arbor-vitae*s, make beautiful hedges. The *Retinosporas*, or Japanese *Cypresses*, should be included in all collections of conifers, being objects of great beauty. *Ericoides*, *filifera*, *obtusata*, *aurea*, and *plumosa aurea* are charming sorts, and all suitable for even the smallest gardens. I have seen them in flower beds, and also well grown in tubs and large pots. Finally, we have the *Yews*, and these are so well known as to need little or no recommendation. The common *Yew* is suitable either for a tree or a hedge. The variegated variety of the Irish *Yew* is a lovely object amongst masses of dark green-leaved plants, or by itself on a lawn.

EVERGREENS consist of such subjects as the *Aucuba*, one of the most accommodating of all shrubs. It is very hardy, and will flourish even in towns, and almost in semi-darkness. *Japonica maculata* is the golden spotted kind, *luteo-carpa* the yellow berried, and *viridis* the quite green kind. The variegated one is the greatest favourite, and, since male varieties have been introduced, it can be made to bear dense clusters of beautiful red berries. In buying *Aucubas* a male plant should always be secured, and this should either be planted near the female, or it may be kept in a pot and transferred from tree to tree when both are in bloom. If left for a day or two in the midst or under the plants on which it is desired to put berries, the object will be accomplished. The *Arbutus*, or Strawberry tree, is a lovely object where it succeeds; it thrives best in a mild, humid climate, and it may be called a true seaside subject. It produces very beautiful cream-coloured, bell-shaped flowers, and its fruit has all the appearance of ripe Strawberries; but in severe winters the birds rob our trees as fast as the fruit ripens, and, when very hungry, we have noticed them eat the green fruit. The Sweet Bay is another valuable evergreen, which requires much the same atmospheric conditions as the preceding in order to insure free and rapid growth. We have bushes of it here 60 feet high and as much in diameter. They seed freely, and are very pretty when covered with purple berries. I would not advise everybody to plant this Evergreen extensively, but it should be tried everywhere. The *Berberises* constitute another class of beautiful flowering and berry-bearing bushes. *Darwini* is the best sort for the pleasure grounds; its golden clusters of bloom in spring, and its deep coloured purple fruits afterwards, never fail to please. Box needs no comment. Its value as an edging plant is fully known, and as a bush it has much to recommend it. In the *Cotoneasters* we have another valuable addition to hardy berry-bearing plants. *C. microphylla* is the one so often seen on walls, and brightening up the surroundings in winter with its dense crops of bright red berries. *C. Simonsi* is a larger fruited sort, and one which makes a beautiful bush. Some of the old, as well as the more recently introduced, *Euonymuses* are amongst the most beautiful of all our choice Evergreens. They are valuable maritime shrubs, and of all the bushes with which I am acquainted, none are more at home in the centre of a town, or in the most smoky of atmospheres. They are suitable for walls, and are equally beautiful in the form of a bush. We have not seen hedges of them, but I believe they would be excellent for that purpose. *E. ovata aurea* is the golden sort, and *E. japonica argenteo variegata*, the silver-leaved kind.

AMONGST *HOLLIES* there is great variety, and numbers of them should be included in all orna-

mental plantations. In transplanting them it is of the utmost importance that they should be lifted with a ball of soil attached to the roots. In forming hedges of them only small plants should be used, but isolated plants may often be lifted when 6 feet, 8 feet, and 10 feet high. *Ilex aquifolia* is the common green kind, and the Hedgehog, Silver-leaved, Golden Queen, yellow-berried, Handsworth, and *latifolia* are the names of a few worth attention. *Kalmias* are very pretty, but they must have peat in order to insure their doing well. Laurels have been planted to excess in the majority of instances. They are about the least ornamental of all our Evergreens, and should never be given a front place or be planted anywhere, except as screens. *Laurustines* are ornamental at all times, and when covered with clusters of pure white flowers, as they generally are throughout the winter, they speak for themselves. The *Mahonia* is one of the best of all Evergreens for planting as undergrowth, and for very shady places I can name nothing more useful; its yellow flowers and purple berries are also very attractive. The common Evergreen Oak is a useful subject to have in park or pleasure-ground, and so are the other varieties, including *Fordi*, *Suber* (the Cork tree), *concordia*, and the Turkey and scarlet Oaks. The *Rosemary* is a pretty, sweet-scented, old-fashioned plant, but it is only suitable for a mixed bed. *Skimmia japonica* and *S. fragrans* are beautiful in foliage and attractive when covered with red berries in winter. They seldom grow tall, but make fine plants when placed near the edges of clumps of other bushes. *Rhododendrons*, I need not say, should be planted everywhere, but I would forbid the introduction of such a variety as the *ponicum* anywhere, except as game covert. There are now so many brilliant varieties amongst the hybrids that they alone should be used for ornamental purposes. Of

FLOWERING AND ORNAMENTAL DECIDUOUS TREES and shrubs want of space forbids me saying much, but every well-planted place, no matter what the size of it may be, must include some of them, and from the endless variety a selection should be made of the best. I never see a Maple or write of one without being reminded of the wonderful specimens of these trees to be seen at Eastnor Castle; and to judge of Maples by such specimens as are growing there, they must at once be pronounced the choicest of deciduous trees. They may be had to represent bushes of silver, bushes of gold, and bushes of burning fire. They are quite hardy, very free growing, and should be introduced everywhere. The *Acacias* are very beautiful when in bloom in May and June, and their prettily cut leaves retain their verdure throughout the summer. The Almonds are amongst the first of the trees to bloom in spring, and when in full flower at that time, as they invariably are, they have a warm and delightful appearance. *Aralia japonica*, *spinosa*, and *pentaphylla* are noble foliaged plants, and have a grand appearance mixed with Evergreens. The deciduous *Berberises* have the peculiarity of growing well in the poorest soils and most obscure situations, and are very beautiful either in flower or fruit. The weeping Birch, and, above all, the purple-leaved Birch, should on no account be omitted from lists or selections of trees. The *Catalpas* have a graceful habit, beautiful flowers, and ornamental leaves. Amongst *Crataeguses*, or Hawthorns, there are many fine subjects; their flowers never fail to please, while their berries or Haws are equally valued in autumn. The *Cytisus*, or Laburnums, are another grand class of flowering trees; but few of the best varieties appear to be known, the common yellow flowering one being almost the only one to be seen in the majority of gardens; but the white and purple flowering *Cytisus* should also be introduced, as it is exceedingly lovely when in bloom. The *Pyruses* are all showy flowering trees, and the *Deutzias*, especially *crenata* *candissima* and its double variety, are beautiful subjects. The purple-leaved *Filbert* is a plant which should be oftener seen than it is, its dark leaves being most effective in tree groups. *Hydrangeas* are often considered to be too tender for general

planting throughout the country; but they are such gorgeous plants in autumn that they deserve to be tried in every possible way. Here 20° of frost have not materially injured our plants. Lilacs are more common, but it is a pity that the best varieties of them are not more taken advantage of than they are. The *Philadelphus*, or Mock Orange, has conspicuous flowers, which are very sweet-scented. When speaking of *Pyruses*, I forgot *Maulei*, the finest of all of them, and with it should be included the mountain Ash, but none bears such handsome fruits as *Maulei*'s variety. They are almost as large as Golden Pippin Apples, and they are very bright and attractive in colour. Amongst other classes from which a selection should be made may be mentioned the flowering Currants, Snowberries, *Viburnums*, *Weigelas*, and the *Spiraeas*. J. MUIR.

THE JAPAN QUINCE.

(*CYDONIA JAPONICA*.)

DURING the dull days of winter, when trained to a wall so that a slight protection is afforded it, this Quince frequently supplies almost the only bit of bright colour to be found anywhere out-of-doors, and so continuous are its blooming qualities, that it will often flower for months at a time. This Quince makes a desirable wall plant, a handsome isolated bush, and it may even be used as a hedge. The plants best suited for walls are those that have pushed away three or four strong shoots, rather than bushy plants, as when secured to the wall they continue to mount upward, while the dwarfier bushes are sometimes a long while in making a start. Where any number of these plants are grown it will be easy to select the most suitable for whatever purpose they may be required. They thrive best in good loamy soil, so that when planting against a wall, should the soil there not be of that character, it would be better to remove a portion of it and incorporate with the remainder a little more suitable material, combined with some decayed manure. Young plants thus treated will grow freely, and soon cover a good space. No pruning will be required, unless it be to remove superabundant shoots. This Quince is better suited for dwarf walls than high ones; indeed, should the height of the wall be over 6 feet, some other subject had better be chosen.

As an inhabitant of the shrubbery, or as an isolated bush in a sheltered part of the garden, it will flower from early spring till well on into the summer; indeed, occasional blooms are produced at almost all seasons. Owing to their different shades of colour, combined with their free-flowering habit, the different varieties of *Cydonia* deserve a place in any garden, however small. The scarlet kind makes a good hedge, and a showy one when the plants are in flower. They should be tied to wires till about a yard high; then they should be allowed to grow at will, except the shortening here and there of a few straggling shoots. If the soil is good, the plants will soon form themselves into a dense hedge about 4 feet high, and will be very ornamental. A few of the best varieties are *coccinea*, glowing red; *alba*, bluish; *atro-purpurea*, rich crimson; *Gaylardi*, salmon-rose; *nivalis*, pure white; and the old and well-known typical form. *Maulei*'s *Cydonia*, or *Pyrus*, is later in expanding than the Japan Quince, the blooms generally opening about the beginning of April, when they are borne in such profusion as to quite hide the shoots. After the principal flowering in spring, occasional blossoms are produced throughout the summer and autumn. The fruits of this Quince are about the size of small Apples and of a bright golden colour, suffused with red on the sunny side. The flowers are of a bright orange-scarlet colour. The propagation of the Japanese Quince and its varieties is very simple; they produce suckers freely, that can with care be detached when rooted; but where it is not possible to do this, a few shoots may be layered or cuttings put in. The most suitable shoots for this latter purpose are the thin weak ones, produced from the centre of the bush, and as they often originate below the surface of the soil, as much of the buried portion as possible

should be taken, for roots are produced from that part quicker and with far more certainty of success than if the cutting were taken from the upper part of the plant. Another method of increase is by means of root cuttings; they should be divided into pieces about 3 inches or 4 inches long, and dibbled in a bed of sandy soil. Maule's *Pyrus* can be propagated in the same way; but my experience is that success is more certain, especially in the matter of cuttings of the shoots than in the case of the Japanese Quince.

H. P.

Spiræa Douglasi.—This plant, of which a coloured plate was recently given in THE GARDEN, is now perhaps the most ornamental of any in our nursery borders. A double line, some 50 yards in length, of the pink and white forms is now in full bloom, and certainly has a very pleasing as well as a taking appearance. Single plants of it throughout the grounds, some over 8 feet in height and nearly as much through, are all that could be desired, and they associate well with the *Hydrangea*, *Fuchsia Riccartoni*, and other shrubby plants now in flower.—A. D. WEBSTER, *Penrhyn Castle, North Wales.*

Continuous blooming shrubs.—Among the most persistent of flowering shrubs stands the different varieties of *Pyrus japonica*, many of which are still in bloom, though they commenced flowering soon after Christmas. This *Pyrus* or *Cydonia* is far more frequently trained to a wall than allowed to form a bush, but in this shape it should find a place in every garden. Its near ally, Maule's *Pyrus*, still bears some of its brightly-coloured blossoms, and though it does not commence blooming quite so soon as *P. japonica*, it is equally worthy of a place among select flowering shrubs, and, indeed, among fruiting ones too, for in autumn the bright orange-coloured fruits are in some places borne in great numbers, while in others they are seldom seen.—W. T.

Rose Acacia (*Robinia hispida*).—By mid-summer flowering trees and shrubs are but sparsely represented compared with their numbers during the earlier part of the season; therefore one that blooms now, and which frequently maintains a succession of flowers for some time to come, well deserves a word in its favour. Such is this *Acacia*, or rather *Robinia*, which is generally met with grafted standard high, a form in which its racemes of large pea-shaped rose-coloured blossoms are seen to good advantage, especially when the plants are young. It is generally increased by grafting on the common False *Acacia*, with which it readily unites.—W. T.

The Jerusalem Sage.—A good proportion of South European shrubs can hardly lay claim to being considered quite hardy, but the Jerusalem Sage (*Phlomis fruticosa*), at any rate in some of the midland and southern counties, has withstood a number of severe winters without being injured. It is a compact-growing Evergreen, with grey-green leaves and large whorls of handsome yellow flowers, which are at the present time being freely developed in many London gardens. London well says that the remarkable appearance of the foliage is sufficient to recommend it for cultivation independently altogether of its flowers.—N.

Remarkable Fir trees.—"J. C." in the last number of THE GARDEN (p. 42) alludes to a remarkable tree at Sonderhausen, described in the *Garten Zeitung*, which reminds me that there is a Spruce Fir in Gatton Park, near Reigate, which grows in a somewhat similar manner. This tree, if I am not mistaken (but I have not seen it for the last few years), stands at the edge of a small clump of trees, and must be about 50 feet high, perhaps more. One of its lowest branches on its northern or external side, after growing for some 15 feet in an almost horizontal direction like the other branches, rather suddenly assumes a vertical one, and becomes as it were a second tree some 30 feet in height, bearing horizontal branches like the parent stem, the side towards which is not so well furnished with branches as the other, which is exposed to light and air. The branch

which has assumed this unusual growth is much larger than its less ambitious companions. For a Fir tree to have two leaders is far from uncommon, but this is rather a different case. From the description of the tree at Sonderhausen I suppose the branch does not turn up to form a second tree like the one at Gatton, but remains horizontal with the tree growing vertically from it. I have seen this description of growth in England, but cannot remember where. I thought I had a drawing of it in my late father's note-books, but am unable to find it.—G. S. S.

Shrubs for rockeries.—Rockeries have often two or three grave faults. First, they are built of stones too small; secondly, the stones are of too even a size; and last, too few shrubs are used to fill up spaces among the smaller herbaceous subjects, all of which tend to give a rockery a monotonous and flat appearance. The stones should be of good size, all of the same kind, and belonging to the strata of the district, and however irregularly placed, they should all lie in the line of the strata—that is to say, they should lie the same way as they are found in the quarry, especially if large. This gives the rockery a much more natural look, and it matters little how the stones are flung down if this rule is observed. If it is not, an artificial aspect is produced, and is easily discerned. It will greatly help to give the place a natural-looking appearance if good patches of Blackberry bushes, Heath, common Junipers, or other low native or other shrubs are placed at the top or back and here and there between the stones. The Bilberry (*Vaccinium*) is a beautiful rockwork plant. It may be torn from the rocks or ground in large masses and planted at any time in leafy soil, and it will not fail to grow. By the judicious use of this plant I have seen rockeries look as if they had been made and furnished for years, though just newly planted. There are few neater and prettier dwarf shrubby plants than the Bilberry, with its fresh green foliage and pretty bell-like flowers. It helps to fill up, too, while the stock of plants is being increased, but a large proportion of the rockery should be covered by it at all times, to give diversity of outline as well as shade. It thrives best on bare rocks and hard surfaces, provided some leaf soil is shaken in amongst it now and then. The double Furze [is another good shrub for the purpose, and so are *Pernettyas*, *Andromedas*, *Daphnes*, hardy *Azaleas*, *Kalmias*, *Menziesias*, the evergreen *Rhododendron hirsutum*, and any other dwarf and hardy shrubs. All such should be planted before anything else. Much of the beauty of many of the Derbyshire and Yorkshire cliffs is due to the verdant masses of Bilberry bushes growing knee-deep in the fissures of the rocks, filling up every nook and cranny, and subsisting on their own debris for no one can say how long.—W. S. J.

SHORT NOTES.—TREES AND SHRUBS.

Barberry under trees (*Mrs. A. C. P.*).—The best Barberry that you can have for this purpose is the common *Berberis* (*Mahonia*) *Aquifolium*, which would in time form a dense mass high enough to afford the protection you require.

Calycanthus floridus (p. 39).—This does not require shade and moisture. I have large plants of both it and *occidentalis*, and they show a steady tendency to push out sunwards. *C. occidentalis* is not very difficult to strike.—H. N. ELLACOMBE, *Bitton.*

The odour of Privet.—I find the smell of the common Privet very sickly when in flower, and intend to cut it all away. It seems to have no particular value for a garden or shrubbery, and in quantity the smell of its flowers would, I should say, be injurious. As a hedge plant I have nothing to say against it.—J. W.

***Spiræa arifolia*.**—This, probably the tallest and most effective of all the *Spiræas*, is now in full flower, and those who require their shrubby borders to look gay in the month of July should be on the outlook for this very showy and easily-grown plant. It flowers most profusely and grows vigorously in almost all kinds of soils and situations.—J. C. C.

Paul's scarlet Thorn.—This fine Thorn has bloomed finely this season, and is just beginning to be appreciated now that plants of it have attained sufficient proportions to be effective. It surpasses everything amongst Thorns that I have seen as regards colour. Every garden ought, therefore, to possess a few plants of it, less or more according to the space to be devoted to such subjects.—TAUNTON.

GARDEN USES OF SEWAGE.

If it were possible to estimate the value of all the sewage water which in many cases could at a trifling outlay be made available for the garden, but which now runs to waste, polluting streams and carrying pestilence in their course, there is no doubt that the aggregate amount in figures would prove astounding. I do not include in this consideration large cities, or even towns, but attached to these are suburban districts and many country seats where the proprietors have to provide a proper system of drainage, and it is to these that my remarks apply. In many cases sewage might be brought to the garden by gravitation, and where such is the case, all must admit that it is throwing money away to allow it to run to waste in any other direction. Whether it would pay to bring it to the garden where mechanical means have to be employed will in a great measure depend upon circumstances. In the case of large mansions where difficulties are not great, I have no hesitation in saying that sewage would repay any reasonable outlay. As to its value for garden crops, my experience was gained some years ago in a large villa garden in a south-west suburb of London, where the owner had to provide his own drainage for his house and stables. In this case there were no serious obstacles in the way of bringing it to the garden by gravitation. The main drain which received the sewage and also the rain water from the roof of the house and other buildings was taken to a convenient spot in the kitchen garden where a large tank was constructed, into which the drain was led, an overflow drain being of course provided. A neat iron pump was fixed with a length of pipe attached to reach the sewage. This offered a convenient means of getting up the sewage; once in two years the liquid was pumped clean out, and then all the solid matter was taken out, mixed with soil, and used as a dressing for various crops.

THE KITCHEN GARDEN received most of this manure, both solid and liquid, especially such crops as Cauliflowers and Kidney Beans. In dry weather in April and May, Cauliflowers are immensely benefited by a few soakings of sewage. Kidney Beans are much benefited by it towards the end of the summer when somewhat exhausted through carrying heavy crops. Peas in full bearing can hardly have too much of such a stimulant in dry weather. Where practicable it is always desirable, before applying the liquid, to loosen the surface 2 inches or 3 inches deep, as that prevents the water from flowing away from where it is wanted. We never neglected to use sewage freely on Onion beds from the middle of June to the end of July, and the result was always an addition to the weight of the crop. Vegetable Marrows we began to water with sewage twice a week after they got well into bearing, and the produce was something surprising. Globe Artichokes being much in request, we always made it a point to thoroughly soak the soil round them once a week with sewage for some considerable distance, the result of which was that the plants kept throwing up a regular supply of large heads quite to the end of the season.

IN THE FRUIT GARDEN we derived much benefit by the frequent application of sewage, especially in the case of Strawberries. Having a deep soil naturally well drained, sewage was used for these in the most liberal manner, and the crops secured quite made amends for the outlay. I have never before nor since known beds of Strawberries continue so long in bearing as those to which sewage was applied. As soon as the plants commenced to flower we began to apply sewage water, giving them twice a week sufficient to penetrate down to the lowest roots, and this treatment was continued until the first fruits began to show colour. To Peach and Nectarine trees on open walls it was annually given as soon as the fruit began to swell. That the trees were benefited by it was proved by the large and highly coloured fruit which they produced. It was also given freely to Peach and Nectarine trees in pots as soon as the fruit began to swell, and for some time after the

fruit was gathered; consequently our trees continued to possess the most vigorous health. The best crops of Grapes I ever grew in pots I grew in the garden in question. I never could grow, as some say they can, the same weight of Grapes in a pot as the soil in which they were grown, but I believe I am quite within the mark when I say that I grew half the quantity, and all concerned were well satisfied. Since I have been minus the sewage pump in the garden I have never grown so great a weight of Grapes in pots as I did with it. The quantity of water which pot Vines require when carrying a full crop is known to many, but few would credit the quantity that these Vines received. It was my practice to fill a large water-barrow, take it into the vinery, and let it remain there at least twelve hours before I used the liquid. It was then given to the Vines as they required it, which was sometimes twice a day in bright weather in April, as I only used 12-inch pots and they soon got dry under a powerful sun, and the constant strain made upon the roots for moisture.

FOR IMPOVERISHED LAWNS it is, considering its cost, the best and surest fertiliser with which I am acquainted. The Grass at the end of the lawn farthest from the house was thin and poor, caused by the soil being poor, the subsoil for a considerable depth being nothing but gravel. Every year in March we began to put sewage water freely on this part, and by continuing the applications once or twice a week all through the summer we could maintain a nice green sward equal to that of the best part of the lawn where the soil was rich and deep. For Camellias in pots sewage water is a capital stimulant; in fact there is hardly anything grown in a garden that would not be benefited by it if judiciously applied.

J. C. C.

FERNS.

BEST CULTIVATED FERNS.

(Continued from page 500, Vol. XXV.)

NEPHRODIUM FLORIDANUM.—This robust growing greenhouse species is one of the most striking of all our cultivated North American Ferns. Its native habitat extends from Florida to Louisiana, where it is found abundantly in wet woods. Its fertile and barren fronds, produced from a stout, fleshy, creeping rhizome, which keeps well above the surface of the ground, being entirely dissimilar, give the plant a peculiar appearance. Both kinds are leathery in texture and dark green in colour on their upper surface, while their undersides are much lighter. It is specially well adapted for planting in any damp part of a cool rockery, and should be planted in some loose material.

Fronds fertile, much larger than the others. Fructification very singular, inasmuch as the upper half only is fertile, and that part of the frond is pinnate; whereas the lower half, which is always sterile, is pinnatifid. Entirely barren fronds, much more erect. Pinnae lanceolate-acuminate in shape and set quite close to the rachis. Sori very conspicuous.

N. GLANDULOSUM.—A strong-growing Himalayan species, which does very well under cool treatment. The place most suitable for it is a cool rockery or the conservatory, in both of which it cannot fail to prove very attractive, owing to the extreme variations of its peculiarly shaped, leathery, pinnate fronds. The latter sometimes bear broad sterile pinnae and contracted fertile ones alternately, while at other times both sterile and fertile pinnae are exactly similar and found on the same fronds, which also possess another distinctive character not found in any other member of the genus, and which consists in their margins being coarsely serrated and covered on both sides with small glandular tubercles.

Fronds coriaceous and glabrous on both sides; pinnate, with pinnae alternate, sessile, about 6 inches long, and about an inch broad, gradually acuminate, and covered with small glandular tubercles on both sides. Fronds about 18 inches in height. Sori very large.

N. GOLDIEANUM.—This truly magnificent North American species generally requires greenhouse temperature, although it has proved itself to be thoroughly hardy in many places in this country

where planted in a tolerably sheltered spot. It is deciduous in habit, and found mostly in deep rocky woods from Canada and Maine to Indiana, Virginia, and Kentucky. During the growing season its beautiful massive bipinnate fronds, which are abundantly produced from a very succulent rootstock, reminding one forcibly of that of *Aspidium marginale*, give the whole plant a striking appearance. It is undoubtedly one of the very finest and largest growing species of North American origin, and one which produces a very good effect when planted out on rockwork, where its fronds have sufficient space in which to attain full development. It is a kind which cannot well be mistaken for any other sort, and which particularly delights to grow in partly decayed vegetable matter mixed with an equal quantity of sand.

Pinnae alternate and loosely set; their segments, somewhat acute, have their edges crenate or more or less distinctly serrate, with sharp, incurved teeth. Sori seldom or never found on the two or three lowest pinnae; on the others they are arranged in a row much nearer the mid-veins than the margins.

N. HIRSUTUM.—This greenhouse Fern is undoubtedly one of the most beautiful of the already numerous New Zealand species in cultivation, and one of the most remarkable as well as one of the prettiest of the whole genus to which it belongs. It is exceedingly useful for growing in Fern cases in rooms where it delights in the company of the *Todeas*; for although not a Filmy Fern, it can only be induced to thrive under conditions favourable to their growth—a surprising circumstance, as not only is its texture very leathery and in no way similar to theirs, but its beautiful tripinnate fronds are clothed throughout with numerous small, bristle-like dark brown hairs, and also the stiff wiry stalks on which they are borne. It is a plant of medium growth and very graceful in habit and colour, the latter a rich, dark, glossy green. It has a peculiar dislike to close or strong soil, and loam should be carefully avoided; the compost in which it thrives best is a mixture of peat, chopped Sphagnum, and silver sand in about equal parts, and it should be grown in the darkest and closest part of the greenhouse.

Fronds tripinnate, with pinnae and pinnules set very close together, the latter being particularly acute, and the pinnae terminating in a very sharp and elongated point. Sori most copious on the fertile fronds, where they are situated on the middle of all the veinlets, forming a sort of a double or sometimes triple row to each pinnule and of a very dark colour.

N. HOOKERI is a very handsome East Indian species and not so often seen in collections as it really deserves. It is a most accommodating plant of a cheerful pale green colour and medium growth. It seldom reaches over 20 inches in height, and is a species which requires no special treatment. It thrives equally well in a stove or in a greenhouse, but it is very partial to a shady place and likes abundance of water at the roots.

Fronds pale green, pinnate, and of a very peculiar shape on account of the lower pair of pinnae being very small, but lengthening upwards and tapering to a point towards the extremity of the frond; these pinnae have their margins obtusely crenate and closely set along the rachis.

N. JAVANICUM (*Polypodium villosum*)—This is an exceedingly fine stove Fern from the Malay Islands, well adapted for planting out on a warm rockery where, on account of its great size and large fronds, which rise boldly with their stalks in tufts direct from the root, which, with age, forms a short and very stout caudex, it forms a most decorative plant. The fronds remain a long time on the plant; they are of a very coriaceous character and hairy throughout, but particularly underneath where pellucid globular glands are also copiously found. The whole plant is of a rich dark green colour and very striking when fully grown, although the fronds, when only partly developed, are densely clothed with brown chaffy scales, which when fully grown are confined to the back and margin of the stalks.

Pinnae sessile or attached to the rachis and slightly auriculate at their base; they measure from 5 inches to 8 inches in length and are linear in shape, gradually and finely acuminate, with apex entire and the rest pinnatifid more than half the way down.

N. JUGLANDIFOLIUM (*Aspidium nobile*).—A North American Fern of very distinct and striking

habit, resembling in general aspect the well-known *Lastrea Sieboldi* or the popular *Cyrtomium Fortunei*, both of which, however, are thoroughly Japanese species and cannot possibly be mistaken for the American plant. Although in cultivation this greenhouse Fern always remains a plant of comparatively low stature, dried specimens of it show that it naturally attains a large size, for, although specimens from Texas are only equal in this respect to the cultivated plants, some dried fronds of it gathered in Venezuela and Mexico, where it is also said to grow abundantly, measure over 30 inches high. Its pretty and evenly pinnate fronds, which under cultivation seldom exceed a foot in length, are borne on short, round, green stalks, very chaffy when young, with scales of the same colour as those which cover the crown, but much narrower; these, however, gradually wear off as the fronds get matured.

Pinnae 4 inches to 6 inches long by 1 inch wide, opposite, and closely set, generally five to seven on each side of the rachis, besides a separate terminal pinna larger than any of the others. Sori dorsal on the veins and form a row each side of the midrib. Outside of each of these rows is a second one less complete, and outside of this are often found a few scattered sori, very much in the same way as in *Cyrtomium*.

N. LINEATUM (*Aspidium obscurum*).—This very bold-looking stove species from Ceylon is particularly adapted for planting out in the warm rockery where it proves very effective if only on account of the very cheerful light green colour of its beautifully arching foliage. Its particularly robust fronds, ovate in shape and reaching under cultivation to some 30 inches in height, are produced from a thick, fleshy crown.

Pinnae 5 inches to 7 inches in length by 1½ inches in breadth; veins on their upper side furnished with a few distant long hairs, while their under surface is slightly pubescent or subglabrous; the terminal pinnae always of larger dimensions than the others. Sori small and situated on the middle of each vein.

P. L. L. E. A.

KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

ONIONS.—I do not remember ever having seen so many "patchy" beds of Onions as there are this season; in fact, I can only point to one good bed in this neighbourhood, and that unfortunately is not in the garden under my care. A great difficulty was experienced in getting the ground into good order for the reception of the seeds, and owing to the cold and wet state it was in it proved most unfavourable to the germination of old or inferior seeds especially. Then just as the sprouting stage was reached, or about the 22nd of April, we experienced cold dry winds and severe frosts, and this proved most destructive, especially to those only lightly covered with soil. Onion seeds, as a rule, are seldom covered with more than a quarter of an inch, but for the future I shall take particular care that the drills are drawn deeper than they hitherto have been. The seed sown in the bed above alluded to was covered fully an inch, and I find that all the seeds that grew here were buried quite as deeply. When buried deeply it is thought that the young Onions are less liable to be attacked by maggot, and it is quite certain that it does not injuriously affect their bulbing. In our case we considered it advisable to sow more seed, besides transplanting a considerable number, and in this way we shall have a lighter crop than usual, though yet sufficient to meet our demands. Where, however, the supply will not be equal to the demand, it is advisable to grow more Leeks than usual, and also to pay particular attention to the crops of autumn-sown Onions, both as regards those of the latter now rapidly maturing and the sowing of early sorts for the spring supply. At present the white Tripoli only should be used, this being the worst keeper, while extra pains should be taken with the ripening of better keepers, such as Brown Globe and Giant Rocca. Early in August any of the two latter that are erect and stiff should have their necks twisted and the tops brought down, thus hastening maturation. As soon as the tops change colour the crop should be lifted and laid together on a dry bottom in the full sunshine, or, better still, be

spread about on the dry shelves or floors of vineries. Properly ripened they will keep till Christmas, and thus admit of the better keeping spring-sown Onions being preserved for later use; whereas, if they remain on the ground too long, or be stored on a damp bottom, they will commence rooting afresh and be of comparatively little service. The second week in August in most localities is quite early enough to sow Onions intended to stand through the winter. White Queen is the earliest to bulb, and this little favourite may be grown rather thickly, say in rows about 9 inches apart, and be thinned out as required. To succeed this the White Naples is the best. The Giant Madeira is a very fine white later sort, and Large Globe Tripoli and Giant Rocca, or the latter only, may well complete the list. These larger sorts are sown thinly in drills about 12 inches apart, and not much interfered with till the spring.

LEeks should be more extensively grown in the southern counties than they are, as whether Onions are plentiful or not they will be found to be of great service, and to be appreciated either for soups or as a vegetable. Our *chef* would rather we failed with Onions than with Leeks. Fortunately, Leeks are easily grown, and are, perhaps, the hardest vegetable we have. If we want early and extra fine produce the seeds should be sown in heat, the plants pricked off on shallow beds of soil and manure, and otherwise treated similar to Celery—*i.e.*, grown in trenches and carefully moulded up. For ordinary purposes the seed should be sown on a good early border early in March thinly, in drills about 6 inches apart, and any time in July they will be fit to plant out. Here they are usually grown on east borders and follow either Broccoli or Savoys. Directly the latter are cleared off the ground is heavily dressed with good short manure and deeply dug. During June or early in July the winds, sun, and rain will have brought this rough ground into condition, and as it is much liable to become hard baked, this is anticipated by being raked down after a soaking rain, thus enabling us to plant the Leeks at any time. When the plants are sufficiently strong or about 18 inches in height they are fit to plant. We proceed by first drawing drills lengthways and 15 inches apart; holes are then made with a dibble 12 inches asunder, 6 inches deep, and about 2 inches in diameter. Into each of these holes a plant is dropped, and no fixing is given beyond what is accomplished with the watering-pot. This deep planting appears to suit Leeks, as they gradually fill out the holes and continue growing throughout any ordinarily cold winter. No moulding up is necessary; the soil gradually works in around the stems and insures their being properly blanched. Ayton Castle and Musselburgh are good serviceable varieties, one in my estimation being equally as good as the other.

YOUNG CARROTS.—These are always acceptable, and this season we are sowing greater breadths than usual, owing to the partial failure of the spring-sown seeds. From what I can learn, Carrot seed was not harvested in good condition, and this, coupled with the cold state of the ground, has resulted in a good many failures. Those who have not already sown seed of a good early sort should do so at once, both on a good light piece of open ground and also on a sheltered border, where part of the breadth can be covered with a frame or frames, from which they can be drawn in all weathers. We prefer the Nantes Horn, and, failing this, should sow either the French Horn or Sutton's Champion Short Horn. The drills may be drawn about 9 inches apart, and if the soil is at all dry a good soaking of water should be given prior to sowing. The seed is best sown thinly covered with fine light soil to which wood ashes have been freely added, and the seedlings should only be lightly thinned out. With a very little trouble we are thus enabled to have sweet young Carrots during the whole of the winter, and these this season will serve to eke out the poor supply of old ones.

SAVOYS.—Where many vegetables are required, Savoys should be extensively planted, especially

the smaller sorts, such as Little Pixie, Tom Thumb, and Early Ulm. The two former may be planted about 15 inches apart each way, and, supposing the ground to be in fairly good condition, a large number of very good heads may thus be obtained from a comparatively small piece of ground. The Early Ulm and also the Dwarf Green Curled we plant about 15 inches apart each way, and the Drumhead for the latest supplies are given another 3 inches each way. More space than this given to Savoys would be a mistake, as it is not a few large close heads of inferior quality that should be grown, but rather a much greater number of smaller and more tender heads.

WHEN TO SOW CABBAGES.—Every district seems to have its own particular date on which Cabbage seed to stand the winter should be sown, and the sooner fresh arrivals discover this date and act upon it the better it will generally prove for them. In this neighbourhood the right time to sow is about July 20, and the favourite variety is Wheeler's Imperial, but Ellam's Early Spring is much superior to it, and the larger Heartwell Marrow is also much liked. It should be stated that ours is a cold, heavy soil and the plants must be put out early, or they make no progress before winter. Where the soil is light and the district naturally favoured, the first week in August is soon enough to sow, as if the plants are raised much earlier they are almost certain to run to seed prematurely.

W. I. M.

Mushroom beds.—The Mushrooms which I sent for your inspection some little time ago, and of which you spoke favourably, were gathered from an open-air bed made up in spring on the ridge system. In the cultivation of Mushrooms outside, if any, position has a great deal to do with the matter, the best being a shady, sheltered corner away from the drip of trees, but well enclosed with walls or, better still, hedges. In such a place the beds do not get dried up by the sun or parching winds, but remain for a long time without any heavy waterings; still in dry weather the litter covering them should be slightly sprinkled every evening, as that tends to encourage the growth of fine, fleshy Mushrooms. We put more material in our beds than most people, as the more bulk the longer they appear to remain in bearing, and we always like to surface the beds with best pasture loam. The preparation of our material is not different from that of other people, but we are very careful not to have it too dry, and to make the beds very firm.—CHAS. BENNETT, *Besborough, Cork*.

GARDEN DESTROYERS.

APHIDES AND RED SPIDER.

WILL "G. S. R." kindly say if it has been satisfactorily proved how many distinct forms of aphides there are in this country? I have an idea there are only two really distinct species, viz., the green and black aphid, and that the many different shades of green as seen in the aphides of the Rose, Peach, Plum, Currant, Lime are all merely different forms of the common green fly, and that the various hues may be attributed to the different plants on which the insects feed. This seems the more probable, as all these latter forms are alike distinct from the black aphid in their inability to resist insecticides. The grey aphid, too plentiful just at present on Plum and Currant, would seem to have an especial liking for the under-sides of the leaves, as it is usually found there. The Black Currant has not escaped injury this year, the bushes in some parts being smothered with aphides. Again, is the black aphid of the Bean and Cherry one and the same insect? and the same question may be asked in reference to the black or dark brown aphid that gives considerable trouble in the Camellia house. It is not so easy to destroy as the green and grey, and I thought, therefore, the two must be closely allied to the Bean and Cherry fly. The more intimately we are acquainted with the various forms of aphides the better shall we be able to cope with them, and this will be some

advantage in a season like the present, when fruits, flowers, and vegetables are alike damaged by their attacks. Whilst on the subject of garden destroyers, I should also like to ask if there are two species of red spider. I have never noticed indoors the very dark red kind, nearly the size of a pin-head, that is common on out-door trees about this time. Is it the originator of the myriads of pests that give so much trouble in the Peach, Strawberry, and Melon houses, or a distinct species? I have watched red spider pretty closely, and have always found indoors that the colony was the production of the tiny red insect not larger than an impression made on paper with the point of a pin. Is the scarlet individual of pin-head dimensions the queen, so to speak, of this mighty army, or only a worker? E. B.

Lettuce fly (*M. H.*).—I have very carefully examined the earth forwarded, but could find no flies or grubs amongst it. The grubs attacking your Lettuce and Carnation roots are very probably those of the daddy-longlegs or some nearly allied species; they may be trapped by burying small slices of Potatoes or Turnips near the plants about an inch below the surface, and examining them every morning. A small stick stuck into each piece will show where it is buried. If you will send some of the grubs in a small box containing some damp Moss they will travel safely.—G. S. S.

Wood-boring insects (*R. C. Gainsboro*).—The insect you forwarded is a female specimen of the giant Sirex (*Sirex gigas*). Though very formidable-looking, it is quite harmless, except to timber. The female bores with her long ovipositor into Pine logs and unhealthy Fir trees, and lays her eggs just beneath the bark, and the grubs bore into the solid wood. There are frequently in unseasoned timber some of these grubs, which undergo their transformations in it, and appear in due time as perfect insects, sometimes to the astonishment and alarm of those who find them.—G. S. S.

5218. — *Chrysanthemum grub*.—This troublesome pest, like most out-door insects, seems unusually plentiful this year. Paris Daisies (*Chrysanthemum frutescens*) are so badly affected by it in some places as to be all but destroyed. I have tried both lime and soot dusted on the leaves in quantities as much as the plants would bear with little or no effect. A good outlook should be kept, and as soon as any leaves are seen to be attacked, the grubs should be sought for; they can easily be seen lying between the upper and lower cuticle, and crushed, as if allowed to get to any considerable head, the plants are not only disfigured, but much injured.—T. B.

Destruction of white scale.—Those who have had this formidable enemy to deal with know something of its voraciousness and its tendency to rapid multiplication. Lately it appeared among our stock of Pines, probably introduced with two or three suckers which we obtained, and in a very short time it got established on the greater portion of the stock. This being during the short winter days when the syringe could not be applied safely, we puffed a quantity of dry lime and soot among the plants and over the surface of the beds. This kept the scale in check, and when blinks of sun came out we dewed the plants by means of a fine syringe with soot water made with lime the colour of sherry. Under this treatment the whole stock is now clear of scale and in perfect health. Many years ago I had to deal with a larger stock of Pines completely coated with mealy bug. After trying numerous cures no improvement was made till I adopted the lime and soot cure. I syringed it copiously among the stock, and all became clean and healthy.—EXPERIMENTO.

Anthracite coal.—Can this be used in a saddle boiler? and will it last as long as the other sort of coal? I find that many now burn coke. I should like someone who has tried anthracite coal to answer these questions. I certainly think that if coke could be depended upon as keeping a fire long enough, it is to be preferred to common coal as it makes no smoke.—G. C.

NOTES OF THE WEEK.

THE Midland Railway Company have decided to offer premiums to their officials at country stations for the best kept station gardens—a step undoubtedly in the right direction.

Gardeners' Royal Benevolent Institution.—We have been requested to announce that the annual simultaneous collection in aid of the pension augmentation fund of this institution will take place on Monday, the 28th instant. Collecting cards have been issued to every gardener whose name is in the horticultural directories, and if any who may be disposed to assist the committee, and who have not received a card, will apply to Mr. Cutler, 14, Tavistock Row, Covent Garden, he will send one by return of post. It has been determined by the committee that the collection shall cease on the 30th November next. An appeal from the committee to all the nurserymen, seedsmen, &c., throughout the United Kingdom has also been made. The committee earnestly hope that the gardeners of England will cheerfully respond to their endeavours to raise the pensions of this society to the annual amount of £20 and £16 respectively.

A feast of Strawberries.—Mr. C. M. Hovey, of Boston, the well-known raiser of Hovey's Seedling, Boston Pine, and other Strawberries, invited the other day, according to the *Massachusetts Ploughman*, a few friends to enjoy with him a walk through his garden and partake of the delicious fruit with which his name will ever be associated. Who, indeed, could decline such an invitation? It was of all things interesting to accompany him about his thirty-five acres of cultivated grounds, and listen to his talk as he came close to every specimen shrub and flower, some of them transplanted from foreign soil, others of his own origination or improvement. The garden excursion over, the company was called on to enter the hospitable home of the owner. Here was shown the trowel which Mr. Hovey used in the ceremony of laying the corner-stone of the grand Horticultural Hall in Boston. Also the thirty-six volumes of the *Magazine of Horticulture* which he edited—a special library of itself, and a monument to his industry and ability. On the tables was spread a feast of Strawberries, and all were invited to test every one of the several varieties, each indicated by its proper label, and finally to try the Hovey Seedling. He said he cared for no Strawberry to eat with cream unless it was the Hovey Seedling, a variety raised as far back as 1833, and still one of the best of American Strawberries. A number of hours having been thus passed in the most enjoyable manner, the party finally took leave of their contented and enthusiastic entertainer, who even now at the ripe age of seventy-four has not lost a particle of the zeal of his earlier years, nor any of his former love for horticulture.

Glasshouses for Sydney.—Messrs. Dennis & Co., of Chelmsford, have been instructed to send to the Botanic Gardens, Sidney, New South Wales, two ranges of span-roofed houses all 20 feet in width, one adapted for stove plants and the other for Orchids. In each case a central tiered stage is provided, as well as side stages, next the glass, the latter so arranged with slate sides and perforated slate bases, that plunging and propagating operations may be easily carried on in them. The same firm are also commissioned to supply the heating apparatus for these houses; it consists of a single large Dennis' patent horizontal tubular boiler with valves and connections so arranged that each part of each house can be treated separately and independently.

Covent Garden Market.—The responsible agent of the Duke of Bedford writing to *The Lancet* says—"The whole of the Market is regularly swept twice a day, and many of the gangways thrice or oftener. The contractor's men and carts are in constant attendance. A large sum is paid for the cleansing, but the work is exceptionally heavy, and is required to be well done. All the sanitary arrangements within the Market are under the direct supervision of the estate sur-

veyor, and the costly latrines erected a year or two ago are admitted to be the best of their kind in London. I am privileged to know many of the medical men in the neighbourhood, and I am not aware that the state of health among the salesmen and their servants is otherwise than satisfactory. Obviously a market that is limited in size, that at certain seasons is in use throughout almost the whole twenty-four hours, over which the traffic never ceases, and in which all the commodities sold give out refuse, presents peculiar difficulties in the way of management. There must inevitably be periods of apparent confusion and untidiness. These periods frequently occur, and the more frequently during such seasons as the present, when fruit and vegetables are continually arriving from the suburbs of London, the south of England, the Channel Islands, and the Continent. But no expense is spared to secure efficient control, and especially to have as prompt a clearance of all refuse as the business of the Market will permit. For the proper cleansing of the streets leading to the Market quadrangle the Strand District Board is wholly responsible, the traffic being regulated by the police. The public crowd their vehicles into these approaches, and by their continuous occupation hinder the contractor employed by the District Board from efficiently doing his work. Added to this is the circumstance of shopkeepers blocking up the roadway with their merchandise, instead of keeping it within their shops. These are matters that are entirely under the control of the police. The cross traffic is an occasion of much inconvenience, but the police alone can deal with this difficulty. Although Covent Garden Market is private property, yet from its popularity and use it has acquired a quasi-public character, and therefore is open to criticism; but that criticism should be reasonable and truthful.

PLANTS IN FLOWER.

Tuberose.—We have received from Mr. W. Balchin, Hassocks Nurseries, Hassocks, Sussex, some fine spikes of Tuberose. Most of them average from twenty to thirty flowers on a spike, and some have thirty-six flowers. The spikes sent were cut from single bulbs grown in 5-inch pots.

Seedling Carnations.—A gathering of some uncommonly fine seedling Carnations has reached us from the raiser, Mr. Payn, Earl's Court, Tunbridge Wells. They are too numerous to describe; suffice it to say that their colours are varied and rich, and some are uncommonly bright and beautiful.

Gentiana bavarica.—We have seen this lately quite happy in a moist spot in the rock garden at Floore. Hitherto it has been rare in cultivation, being rightly supposed to be more difficult to grow than the other alpine Gentians. Its great beauty, however, warrants earnest attempts to grow it. The long rest under the snow in its native turf is a condition not easy to imitate, nor the moist banks of delightful turf by the alpine rills in which its iridescent blossoms are seen.

Lilium Harrisii.—I send you a spike of what is called the Easter Lily. The spike is from a bulb given me by Messrs. Wrench, and has been grown in the orchard house. It is evidently a tropically developed form of *L. longiflorum*. I also send a spike of *L. longiflorum albo-marginatum* with two flowers.—G. F. WILSON, *Heatherbank, Weybridge*.

** The spike of *Lilium Harrisii* is certainly very fine, being over a yard high, and carries several large white flowers and buds, which keep opening even after the spike has been cut some days. It is certainly a noble Lily. The variegated-leaved form, too, is a well developed specimen.—ED.

Zenobia speciosa.—Some beautiful flower-sprays of this charming shrub have been sent to us by Mr. Latham, from the Birmingham Botanic Garden, who justly considers it to be one of the most desirable of all summer flowering shrubs of low stature. The sprays sent are literally loaded with tiny white wax-like flowers. This plant is the type of the pretty *Zenobia pulverulenta* figured in *THE GARDEN* a short time since, and which only differs in the leaves being covered beneath with a mealy white powder. Every gar-

den should contain one or the other of these beautiful shrubs.

Gentiana septemfida.—Among a gathering of Gentians, Mr. Wood, of Kirkstall, sends us some fine specimens of this lovely species—one of the finest of the genus. It grows about a foot high, and its flowers, which are about as large as a full-sized thimble, are of the richest cobalt-blue imaginable, and exquisitely fringed inside. Other species sent are *G. asclepiadea* (2 feet high), *G. gelida*, and *G. cruciata*. With regard to these Mr. Wood writes as follows: "In all cases these Gentians have been grown with a little shade, as, for instance, on the north side of stronger growing tall Gentians, or behind dwarf Roses. I have quite come to believe that this section, comprising *G. gelida*, *septemfida*, *affinis*, and others, are the better for a slight screen in a sloping sunny garden like mine."

Parnassia nubicola.—This Himalayan Grass of Parnassus is now flowering on the rockery at Kew. Although it may not come up to our own native *P. palustris* in profusion of flowers, it very far exceeds it in size and effectiveness. *P. nubicola* is the strongest growing of all the Indian species, is well adapted to our climate, and an important addition to hardy bog plants. It may be grown with fair success in pots for one or two years, but needs renewing, as it suffers considerably from drought. It grows robustly if planted in the shady corner of a bog or natural swamp. Its leaves, which are all radical, are borne on footstalks about 3 inches long, and its creamy white flowers, which vary from 1 inch to 2 inches in diameter, are produced singly. It seeds freely, and the sooner they are sown after they are ripe the better.—K.

ROSE GARDEN.

Marechal Niel on open walls.—It appears to be clear that we cannot tell whether this Rose will thrive or not in any position until it has been tried. I have lately seen a healthy plant of it covering a large space on the wall of a cottage facing the east, and flowering as well as anyone could desire, with the roots growing underneath a stone pavement, and not a foot of soil visible on the surface. There are many places where it will not thrive; but, as I have just said, no one can tell whether it will do so or not until it has been tried.—J. C. C.

Rose Celeste.—This was well shown by one exhibitor at the Rose show at Wirsbworth on the 17th inst. A centre piece with its lovely buds arranged on the base of a stand covered with *Selaginella apoda* had a charming effect, and the buds of the same Rose plentifully worked up in a pair of bouquets showed how valuable this variety is for such work. A basket of Roses 2 feet in diameter formed the chief attraction of the show. It contained lovely bunches of Celeste with its telling foliage, and also fine buds and foliage of another good old Rose rarely met with, viz., the Macartney, and another white Rose of globular form and very sweet, thus showing that these good old Roses are still to the fore. I am anxious to hear of an old Rose now lost or nearly so, viz., *Rosa kantschatica*.—ADMIRER.

Rosa Brunoniana.—In all probability this is merely a geographical outlying form of the South European *Rosa sempervirens*. It is, however, a much stronger grower than any form of that species at present cultivated in gardens. It is a native of the Himalayan region, and is harder than a good many plants from that part of the world; even if its long vigorous growths are now and then cut back by very severe winters, shoots several yards in length are soon developed from the root-stock. To see it in its full beauty, a few plants should be placed in the mixed shrubbery or in the woodland border or wild garden, and allowed to ramble at will over low or thinly foliated trees. The enormous heads of pure white scented blossoms are freely produced, and a succession of them is borne for a long time. To sum up its merits, *Rosa Brunoniana* is about as well

able to take care of itself in a semi-wild condition as any of our native Briers or Brambles.—N.

A WILDERNESS OF ROSES.

WHEN employed in a large garden at the foot of the South Downs, I was called upon to take an active part in the formation of what was there termed a wilderness of Roses, and I was fortunate enough to see all the details brought to a successful issue, and also to have opportunities afterwards of seeing it in all its wild beauty. It must be understood, however, that I am writing of thirty years ago, at a time when Hybrid Perpetual Roses were only just beginning to make headway—not monopolising, as they do now, nearly every part of the garden. I am writing, too, of a time when Bourbon Roses were in high favour as autumn bloomers; also when we had hedges and lines of the Provence and Scotch varieties, beds of China Roses, and huge pillars of the Ayrshire kinds that gave us garlands of blossoms stretching from pole to pole—a sight seldom seen now-a-days. It is of these old Roses and the particular way in which we then grew them that I now wish to direct attention in the hope that I may in some way assist a revival of this form of Rose growing. Our first step was to secure the plants—not altogether an easy task, for orders had been given not to use a budded or grafted plant, the aim being to secure Roses that would defy frost, and that when once planted would last a lifetime, so that only Roses on their own roots were available for the purpose; we therefore set to work to strike some from cuttings and to raise others from suckers. Every garden of note for miles round was hunted over in order to secure cuttings of all the old Roses which it was possible to obtain. The work was begun early in September. One corner of a large frame ground was set apart for the purpose—just the right position. On two sides of it was a wall, and at the ends Privet hedges. This space was marked out into beds 4 feet wide with a 2-foot alley between them; 2 inches or 3 inches of road grit were spread over the surface and lightly forked in. This grit was put on for the purpose of promoting root formation. Those varieties which were to be obtained from cuttings were taken in hand first; these included the China Roses, Ayrshires, and Sempervirens group. The cuttings were made into lengths of about 6 inches, or according to the number of buds on the branch. We were careful to have them long enough to get two buds with the leaves intact above the ground, and with not less than 4 inches buried in the soil, for it is important that the cuttings be long enough to be made firm. As fast as the cuttings were made they were put in. A straight cut was made with a spade and the soil drawn out so as to form a narrow trench. At the bottom of this a layer of coarse sand was placed, on which the base of the cuttings rested. The soil was then put back in its place and carefully rammed round each cutting, for unless firm planting is secured the greater proportion of the cuttings will die before they strike root. It is also important to take care not to injure the leaves left on the cutting—not that the cutting would not emit roots even if they were removed, but cuttings put in with the leaves fresh and uninjured form roots sooner than those

without leaves. The chances are that cuttings furnished with leaves would form roots before the end of the year, while those without them would only form a callus, and remain in that condition until the spring. As fast as the cuttings were put in they had sufficient water to settle the soil about them, and if a bright or windy day occurred during the first ten days or so a few green branches were laid lightly on the beds, to afford them a little shelter. The varieties dealt with by means of suckers were the Scotch, Provence, and Boursault. The more difficult sorts to propagate, such as the Hybrid Bourbons, including Coupe de Hebe, Paul Ricaut, and Charles Lawson, and the China varieties, such as Blairi No. 2, Brennus, and Madame Plantier, as well as the Moss Roses, were all obtained from a nursery.



A rocky gorge in the Mendip Hills.

GETTING SUCKERS.—This part of the business was not taken in hand until the middle of October, as it was not desirable to disturb the roots of the old plants in getting out the suckers before they had done growing for the season. We experienced no difficulty in getting plenty from the Scotch Roses, but the Provence and Boursault gave us more trouble. We lifted them with a light three-tined fork, and got them with a growth several inches in length under the surface. Every sucker indeed was carefully traced and secured with roots where there were any, and severed with a sharp knife as near the stem as possible; they were then planted in beds by the side of the cuttings. Both cuttings and suckers were allowed to stand one year, and then they were planted out, and while they were developing roots and branches we had ample time for the preparation of the ground. The size of the rosery was about half an

acre, and it was surrounded by trees and shrubs on three sides, and the park on the other. The earth taken from the walks was placed in heaps, and some old butt-ends of trees were so placed as to form mounds 5 feet and 6 feet high. Distributed here and there were climbing Roses on Larch poles 7 feet and 8 feet in height, and when some of the Ayrshires had reached the top, they were allowed to grow in their own way without pruning. A large bed of mixed Noisettes were also permitted to grow with very little pruning. Referring more particularly to the planting, I may mention that the pillars were generally planted with the Ayrshire varieties, which had to be trained to supports in the first place; but after they had covered them, they were only attended to once a year just to keep them within bounds, all formal training being avoided. The rooteries were planted with various climbing sorts of rampant growth, and they were allowed to grow in the most natural manner with a little thinning out of the branches in after years. In the beds on Grass every sort was treated according to its habit and requirements; for instance, the Scotch, York and Lancaster, White Unique, and Cabbage Roses had very little pruning; but the China varieties require some of the old wood cut out every winter in order to induce them to flower satisfactorily.

THE CONFIGURATION OF THE GROUND and every part of the arrangement were of the most informal character, but description fails to convey an adequate idea of the charming character of this rosery. It reminded one of a wilderness of Roses dropped down from the clouds, not the faintest indication of such a spot being given until one was close upon it. The walk leading to it was fringed with shrubs and trees on both sides, and many were the exclamations of surprise uttered by those who saw it for the first time. The keeping of the ground was quite in character with its contents; there was no attempt to have it dressy. The walks were gravelled and kept free from weeds, and the Grass was mown with scythes about three times during the summer. The display made by the Ayrshire Roses on the rooteries was magnificent. There are not many varieties in this section, but their colours include pure white, dark crimson, and pale pink, sufficient when freely blended together to produce a grand effect. Of the behaviour of the other sorts I need say but little. I may, however, remark that the soil was a heavy loam bordering on clay, and the growth which the Roses made was of the most satisfactory character.

J. C. C.

THE CHEDDAR GORGE.

It is by no means necessary to always go abroad for examples of the picturesque in the way of natural rock gardens, though the horrors perpetrated in garden rocks everywhere through the land would lead one to suppose a dangerous ocean separated us from a group of natural rocks, or a hillside with Fern-fringed boulders. In the mountainous parts of the country no one need go far to seek rock gardens. The Yorkshire and Derbyshire moors, too, have thousands of acres of lovely rock bog gardens, occasionally rising into bold and picturesque rock walls. Even in non-mountainous Sussex and Kent good groups of

rocks crop out of the earth, garlanded now and then on the steeper slopes by Ferns and Ivy that have clung around them for ages, and always so grouped or exposed, that they are instructive or suggestive to those who take an interest in rock gardening. For boldness and an alpine severity and massiveness we have never seen anything in England so remarkable as the Cheddar rocks. They resemble more a cleft in the Maritime Alps than what one would look for among the green fields of Western England. But though the effect is very picturesque, and even stupendous here and there from our point of view, the lessons of the rocks are not so eloquent as in many a less famed spot, where the rocks crop out just enough to be seen above the Heath and Furze, as in so much of Anglesey and in Derbyshire, and even here and there in the southern counties. The illustration, though good, does not well show the bold and fine look of the rocks in various parts of the gorge.

FLOWER GARDEN.

EARLY BLOOMING GLADIOLI.

FOR some few years past I had lost sight of these very useful flowers until the present season, when I commenced their cultivation again with a few kinds. They have proved so useful, and have been so much admired, that I hope next year to renew my acquaintance with the whole of this section of Gladioli. In the matter of cultivation they are in every way more satisfactory to deal with than the hybrids of *gandavensis*, as all the roots of medium size, if properly harvested, will invariably flower, and there will be few, if any, losses if planted in suitable soil. I have never been so successful in dealing with any of the *Gladiolus* family as hardy plants, as some aver they are, and I could never satisfactorily explain whether the corms died through cold or damp. I shall not, therefore, risk them in the open ground during winter, but they are easily dealt with in a dried state. As soon as the leaves turn yellow, the corms may be taken up and laid out in a dry shed for a week or two to ripen. When the foliage has become quite withered, the stems may be cut off close to the bulbs, and then each sort should be put separately in a flower-pot, with a layer of silver sand over them; the pots may be then stowed away in some dry shed, where they can be kept cool, and only just secure from frost. As to soil, they like it rather light and rich. Indeed, like other members of the family, they do not object to a fair proportion of manure, provided it is not fresh. Good hotbed manure, or that from a farmyard, which is thoroughly rotten, is the right sort for them, if well incorporated with the soil to a depth of 10 inches or 12 inches. As they flower early in summer, a warm position is necessary for them, and they enjoy full sunshine nearly all day. The position of the beds in which they are grown should be changed every year, as they do not thrive so well the second year if grown in the same soil. These Gladioli are not so tender as to absolutely require any nursing; but I find the best results to be obtained by potting the corms in February, and planting them out about the second week in April. Those who have warm, dry borders may plant with safety in the open air by the middle of March. The corms should be placed about 3 inches under the surface, and as they are not strong-rooted subjects the soil should be made rather fine about them. They may be planted in clumps; five corms in a clump 9 inches across will have a very good effect. Our soil being somewhat cold and retentive of moisture, we put four bulbs in a 6-inch pot early in March, and then place them in a cold pit until the middle of April, when they are planted without being disturbed. The varieties which I have grown at different times are *byzantinus*, a crimson-purple kind, with a shaded white throat—useful, but not nearly so handsome as some others; *Colvillei albus*, a very charming variety, the base of the petals being delicately shaded with green; it is, in my opinion, the best of the whole section, and invaluable in a cut state, as the unexpanded buds

open when placed in water. There is a purple variety, which, although more hardy and very pretty, is not equal to the white kind. Of *cardinalis*, there are scarlet and rose-coloured varieties, both of which should be grown. All these flower with us in June and July. J. C. C.

DOUBLE DAFFODILS FROM SEED.

"F. W. B." now says that it was "perfectly double Daffodils"—that is, flowers bearing neither stamens nor pistils—to which he referred, and that such can never produce seed. It would indeed be little short of marvellous if they did, but it is far otherwise with flowers which being in the common acceptance of the word double, yet are not entirely devoid of organs of reproduction. "F. W. B." asserts that only semi-double Daffodils have pistils. What, then, is *Telamonius plenus*? Is it a double flower, or is it not? It is popularly termed and is catalogued as the "large double Daffodil," and it is a flower of this which has given me a pod of seed. Therefore your correspondent is mistaken in supposing that double varieties can never, under any circumstances, be fertile. Moreover, I would not have "F. W. B." suppose that my flower was imperfectly double; on the contrary, I carefully selected the fullest I could find, and that which gave seed was, curiously enough, the finest of all, being crowded with petals, forming a perfect rosette, and it really required a sharp eye to detect the pistil. In our light loam Daffodils show no tendency to become single; on the contrary, they come unusually full. "F. W. B." evidently thinks that in my "single pod" I have found a mare's nest, but such is not the case; on the contrary, the cash-box contained genuine coin. Your correspondent's advice not to count my chickens before they are hatched is good, but, thanks to Mr. Baylor Hartland's hints, I am now in hopes of raising a healthy brood, and shall await the result with some curiosity. With respect to cross-fertilisation, "B." does not appear to have read my former note very carefully, else he would not say that I consider repeated applications of foreign pollen absolutely necessary. What I said was that by fertilising several times the chances of success were much increased. It is all very well to say that one has only to take the flower at its proper season, but how can one know to a certainty when this is the case? A few hours only may make all the difference, and there are other considerations, such as the state of the weather, vigour of the plant, &c., to be taken into account. J. C. B.

EARTHENWARE RINGS FOR BULBS.

"S. W." says he has read my letter on this subject (p. 485, Vol. XXV.) carefully, which I doubt, as he has misunderstood nearly all I have written, and understood more than I meant to convey. In the first place, I never gave him to understand that I had any bulb beds. I am a poor amateur and cannot afford such costly luxuries. Again, I distinctly said that I adopted the plan of earthenware rings to protect and confine bulbs, &c., in order that I might be able to dig with more safety amongst them. My words were, "Their locality does not need marking, for when the spade is at work the ring proclaims its existence, and so is easily avoided." Replenishment from the bulb nurseries is unnecessary where the earthenware rings are used. You only have to buy new sorts, and with ordinary care you will never run out of bulbs once you have put a ring fence of earthenware round them. Had I unlimited bulb beds, I should not need rings, but I distinctly stated that in order to grow bulbs at all I have to grow them in "mixed borders" that have to support a certain number of perennial bulb clumps; and also, owing to the fact that all parts of my garden are "on view" from my drawing-room windows, I am obliged to keep every inch at work all the year round, and so my mixed borders have to support their permanent crops and a host of spring things that are planted in November and removed in May, and their place filled up with summer plants. This system necessitates high

culture. To grow my *Delphiniums* 7 feet to 8 feet high, and *Phloxes* in proportion, and yet have the smaller things good, I find I must resort to the "barbarous practice" of digging amongst my herbaceous material in order that I may feed the poor things with food that will enable them to do what I want; and, to prevent the slicing "S. W." talks about, I use my ring, as the spade that before would have sliced the unmarked clump now is arrested and turned aside. Again, my rings insure my clumps being of uniform size, and when I see evidence of overcrowding then, and only then, do I take them up, turn out the bulbs, replace those that I want, and put the rest away as profit, and so the balance of bulbous plants in the border is kept even with no loss and half the trouble. In spite of "S. W.'s" remarks, I intend to continue my ring culture, and my increasing wealth of bulbs must compensate me for his attack on a system which he has never tried and an apparatus which he has never seen. "S. W." is blest if his *Gladiolus* bulbs do not breed as mine do. I give bushels of corms away from a bit of my kitchen garden where I tried to eradicate them, and when I dig them up there are so many little corms left, that the next year the spot is as thick as ever. I have now given it up and use it as a store for gift purposes. The clumps confined in rings are easily gone over and all the little corms picked out. As to the cost of the rings, I can safely say, even at the high price which I give for them, the increase of bulbs in a couple of years' time will pay for the first cost, and as with ordinary care they will last a lifetime, I do not think they are a bad investment. They are also very suitable for forcing *Strawberries* in on a fixed shelf or stage set on cut turf or a shallow bed of soil. In conclusion, I may say that as an amateur who has had to grope about and buy his experience I wrote the results of that experience for the use of other amateurs, who, like "S. D." in the same number of *THE GARDEN*, seems to see the use of the despised ring, and who evidently has experienced the same troubles that have come to my lot. I may be wrong, but perhaps amateurs may have a different lot of troubles from those which fall to the lot of the professional "plantsman." At all events, they are often willing to go to extra trouble and extra expense in order to insure the lives of their pets, whereas the professional man can insure it by his extra staff and all in the day's work.

Mayland, Colchester.

H. D. PALMER.

LILIES IN LARGE POTS.

THOSE who may never have grown Japan *Lilies* in the form of large specimens can scarcely realise the full worth of these fine flowers. When you have succeeded in obtaining a specimen some 5 feet high, with a dozen or more flower-stems bearing between one and two hundred flowers, you may conclude that you have about developed the capabilities of the *Lily* as a pot plant. But such a result is not obtainable by means of dried off or imported bulbs; they must be home-grown, so that when potted in the autumn they retain every root made the previous year; moreover, they should be almost or quite as large as a cricket ball, and then a single bulb will bear nearly thirty flowers. *Lilies* thus grown are noble objects indeed, crowded with dark lustrous foliage to the rim of the pot and thickly studded with large blooms perfect in form and colour. Nothing can be better than such plants for conservatory decoration during the autumn months.

EARLY POTTING is imperative not later than the middle of November. All the old soil should be shaken away and about a dozen good bulbs put into a 12-inch pot, giving good drainage with some rough material on that, and finishing off with a sprinkling of soot to keep worms out. Let the compost be quite sweet. A good mixture consists of loam and peat in equal parts, with a little leaf-soil and some white sand. Just bury the bulb, leaving one-third of the depth of the pot for top-dressing, and give a moderate watering, and store in a cold frame for the winter, looking to them now and then to see that the soil does not quite

dry up. There is a great advantage in plunging the pots, as the compost is thereby retained in that unvarying condition which most facilitates root formation. If the soil is well moistened when the pots are plunged they do not need any water through the winter, and by the end of March the roots will have formed a network round the pots. Then the shoots will push through with great strength when the growing time arrives. The best place for them up to June is a deep pit, elevating them on large pots, and gradually lowering them as they increase in stature. Watering is a very important detail in the culture of Lilies in large pots, as owing to the larger quantity of soil there is much danger of its becoming sour before the whole of it is thoroughly permeated with active fibres. My rule is to let the soil get nearly dry before watering, and then give just enough to moisten it through, by which means it is maintained in as free a condition through the earlier stages of growth as when first used. It must, however, be borne in mind that the glass is but to serve as a protection against climatic changes, and that every day when the weather is fine the lights must be drawn off. I do not know of any plant which more quickly resents undue confinement than Japan Lilies, and as they are to go into the open air later on, they should make as much of their growth from the time they start in full exposure as possible. From June a sheltered cool position is what they need. I find they do remarkably well where they get the sun up to 12 o'clock, but I also find that the leaves come larger in a north aspect.

IN TYING UP THE SHOOTS do not bring them all up straight, but rather train them out at different angles, so that the natural manner of growth may be preserved. Thus the general good appearance of the plants is much enhanced, and in addition to the large bulbs, some of varying sizes are added, working them in round the edge of the pot. These, of course, do not grow very strong, some of them not more than a few inches high, but they form a solid mass of verdure quite overlapping, and in a great measure obliterating, the pot, but withal having so much of irregularity as would characterise a group of Lilies growing naturally. By the time the buds are all developed the pots will be crammed with roots, and then in fine weather they will need a good soaking of water once a day. If they do not get as much moisture as they need the lower leaves turn yellow, and the flowers do not come to their full size, but I may here remark that exactly the same effect is produced by overwatering, the decay of the roots naturally causing a stoppage in the supplies. In a word, Lilies need not only care, but discrimination in this respect, and he who waters most intelligently will, all other conditions being equal, best succeed in producing fine specimens. Up to the time that the buds are beginning to develop the top-dressing which has been applied when the stems are about a foot high will suffice to maintain the vigour of the plants, but from that time an occasional dose of liquid manure will increase the size of the blooms and deepen the hue of the foliage. The water should, however, be no more than coloured, as Lily roots are far too tender to admit of strong manurial ingredients, and every third watering is often enough to apply it. If these simple instructions are followed handsome specimens more than a yard through and some 5 feet high will be obtained, a result which amply repays all labour and care incurred. J. C. B.

Double Iris Kämpferi—I send for your inspection a double Iris Kämpferi var. E. Harvey. It has twelve petals, and is constant, as I named it in 1881. In the same year I flowered a second double E. Harvey, but neither before nor since have I flowered others really double. I flowered this year a great many duplex varieties, that is with six petals. It is to be regretted that this truly beautiful Iris is not more successfully grown than it is, as it forms a succession to all the other species. I find it does best in the full sun, and where the ground is dry or tending that way.

In summer water should be given freely from the time when it begins growing till it has done flowering.—P. BARE.

** Handsome, but not so much so, we think, as the type in its best form.—ED.

WHITE CARNATION PINK.

IN raising Carnations from seed a considerable proportion of single flowers must be expected, a number of which, lanky and poorly coloured, will be worthless from a garden point of view, though some of good habit and bright colour will prove valuable for rock and wall gardening. But occasionally among the singles and semi-doubles come a freak that proves a highly desirable garden flower, such as the white Carnation Pink here



Carnation Pink. Flowers (natural size) pure white.

engraved. It came originally in a batch of Carnation seedlings, and was at once conspicuous from its dwarf habit and early flowering. So early, indeed, that as soon as the common white garden Pink goes out of flower, this little Carnation takes up the running and continues till the blooming season of the later garden Pinks, that in their turn are followed by the true Carnations. The flowers are pure white, semi-double, of true Carnation substance, and heavily Clove scented. The stalks and calices are also Carnation-like in their solidity and glaucous colour. On the other hand, it resembles the garden Pink in its early blooming, shortness of stalk, multitude of flower, and manner of growing, like it, spreading into broad sheets and enduring three and four years, whereas with us on a very light soil Carnations at two years old are worn out. G. J.

West Surrey.

Double Russian Violet.—I have sadly neglected the cultivation of this Violet, but I am reminded of its existence by coming across a few old plants of it under a wall facing the west, struggling to live and to put forth a few flowers. Only a year or two ago I had this variety in good condition from the beginning of May until the middle of June. Unfortunately, it is not a vigorous grower, but the flowers are very double and sweet-scented. It is the latest Violet to flower with which I am acquainted, and so hardy that no weather injures it.—J. C. C.

White Everlasting Pea.—A neighbour of mine has some large clumps of this in his garden. They are more than 6 feet high, and are smothered with ivory-white flowers, affording a charming contrast to equally large specimens of the pink-flowered kind. How is that this beautiful white Pea is so little grown? One often sees the type in the form of large effective bushes, but its white variety appears to be but little known. It is, however, quite as hardy and almost as vigorous as the pink-flowered variety. Its value for cutting is great, and all that is needful to do is to plant it well and leave it alone, as the longer it is established the more freely it flowers. Of the many hardy white flowers in cultivation I do not know of a finer one than this Everlasting Pea.—J. C. B.

Lobelia urens is a rare instance of a native plant having but one habitat in this country, and that a very circumscribed one; this happens to be within a few miles of Charmouth. There is nothing particularly attractive in the plant, the flowers of which are violet shaded pink; the interest belonging to it rests in its extreme rarity, so far as relates to Great Britain. It is found growing on old moist pastures in fibrous loam of a somewhat peaty character; fine specimens of it reach a height of 2 feet, but the majority are considerably below that altitude. It appears and disappears within three-quarters of a mile, and seems never to have spread further. How it got there, and why it should keep there, are questions which probably will never be elucidated.—J. M., Charmouth, Dorset.

Lilium longiflorum.—I find the flowers of this lovely Lily to be invaluable in a cut state. It makes a useful succession to *L. candidum*. I lift and divide the roots just after the plants have done flowering, say some time in August; our soil is a light sandy loam and suits Lilies of this class admirably without any addition whatever in the shape of artificial mixtures. The position in which I have found them to do best is between rows of bush fruits in a cultivated orchard where they get both shelter and partial shade. Here heads of *L. candidum* have often from twenty to thirty magnificent flowers expanded at one time, and even thus sheltered they need careful support lest their weight overbalances them, as then they break short off at the root. *L. longiflorum* is now in perfection out-of-doors, and is certainly one of the most magnificent of Lilies; its long trumpet-like flowers are of ivory whiteness. In places where this Lily does not thrive well planted out permanently it should be grown in pots in a cool house, but where the soil is light and well drained it will succeed. After repeated trials I find that bulbs of all kinds, and Lilies in particular, should not be kept out of the ground at any time longer than is absolutely necessary for replanting.—J. G., Hants.

Walujew's Gentian.—In a trade catalogue which I picked up the other day, *Gentiana Walujewi*, a species found and recently figured by Dr. Regel in the "Gartenflora," is described as "a very rare and beautiful species from Asia, habit erect, flowers bright yellow, spotted with blue." That the species is rare no one will doubt, but from a gardening point of view its beauty is questionable. It has flowered with us, and the predominant colour instead of being bright yellow is a very disagreeable greyish white, with a few faint blue spots. It seems nearly related to the commonly grown *G. cruciata*, but having fewer whorls of flowers, and altogether a much inferior garden plant. Another point against its general adoption in gardens is the lapse of time that occurs between

raising the seedlings and their flowering; indeed, although perfectly hardy it is really a shy flowerer, and, unless it improves, wholly unworthy of notice.—D. K.

Raising Narcissi from seed.—I have no personal experience as regards this matter. Mr. E. Morse, Epsom, raised a batch of poeticus ornatus from seed which he sowed in a pan at a depth of 2 inches in September, 18-0. In February, 1881, the plants appeared, and were planted out in August. In March, 1884, they commenced flowering. This information is encouraging to the host of amateurs who are now venturing on the enterprise of raising advanced types of Daffodils, and as the materials are abundant at their hands, good work should be accomplished. And the more so if one of our experienced hybridisers would give a few simple rules to be observed, such as how to manipulate, and when and in what state of the atmosphere.—P. BARR.

Souvenir de la Malmaison Carnation.—A number of plants of this fine Carnation, exhibited by Mr. Kirk, gardener to Mr. Dobree, of Byfleet, at the recent show of the Byfleet Horticultural Association, well illustrated its decorative value. The plants in question were admirably grown and the flowers large, and, what is somewhat rare, perfectly developed, being free from that greenish tinge which is indicative of an unpropitious season or of a want of cultural skill. The delicate hue and large size of the blooms render this Carnation one of the fairest flowers in cultivation, and it seems strange that comparatively it should be so little grown. One would think that it would be found in most gardens. Perhaps the difficulty which many experience in accurately hitting off its requirements is the cause of this neglect, and it sometimes happens that climatal influences operate so prejudicially as to prevent the flowers from attaining the delicacy of tint and high development indispensable to a due appreciation of its merits. A fine dry season is, I think, in its favour, and for this reason, probably, it is much more universally grown on the Continent than with us, the long periods of fine weather there experienced being congenial to the opening of the flowers. But we know how greatly care and skill can combat adverse climatic conditions. Those who might have seen Mr. Kirk's plants would probably have thought that any reasonable pains would be well spent in the cultivation of this beautiful Carnation.—J. C. B.

SHORT NOTES.—FLOWER.

Geranium ibericum.—Of hardy Geraniums this is one of the most effective for the herbaceous borders. The bloom, a pleasant shade of blue, is produced in great profusion on established plants; the habit is good and tidy; the foliage handsome and bold, all making it worthy of a good place in borders.—J. T. POE, *Riverston*.

Campanulas doubling.—I send you a Campanula which has become double. Many clumps of single sorts have flourished here for years without ever till now showing a double flower. It has had no treatment different from the others, and has taken me by surprise. My Campanulas grow between 3 feet and 4 feet high, and produce masses of bloom.—ANNE GALLOWAY, *Carse Bridge House, Alloa*.

Spotted Lily leaves (A. W.).—There is but little mildew on the spotted leaves. The spots were probably caused by a hot sun shining on rain drops resting on the leaves, and the few threads of mildew are growing on the injured places. The name of the fungus is *Polyactis cinerea*. The mildew which causes putrescence in Lilies is quite different; that is *Ovularia elliptica*, and when it appears all diseased material should be carefully gathered together and burnt.—W. G. S.

Galetia candicans from seed.—I have fifty or sixty plants of *Galetia candicans* just coming into flower. They were grown from seed, which I sowed under glass, part of it as soon as it was ripe (about September, 1882) and part about February, 1-83. I pricked the seedlings out into a small bed about May, 1883, and they have remained there. It is said that they flower about the fourth year from seed, so I thought a short record of what I had done might be interesting.—A. S. W.

Diseased Auriculas (G. W., Hawick).—The plant sent is attacked by the semi-subterranean aphid or plant louse named *Triuma auriculae*, which first appeared in Britain about seven years ago. It sometimes proves very destructive to Auriculas, and should be kept in check. Tobacco powder or water in which soft soap has been dissolved are considered to be good remedies. This pest has been referred to several times in back volumes of THE GARDEN.—W. S.

The white Lily (L. candidum).—This lovely Lily, unquestionably the finest of the hardy section, grows with exceptional luxuriance about Gosport, large clumps of it being seen in nearly every cottage garden. The soil is very light and stony, and consequently well drained. One autumn I took up some old clumps of it that had not been disturbed for years, and planted the largest bulbs singly between rows of Red Currant bushes, and they appeared to enjoy the shelter and shade thus afforded them, as they not only produced the finest spikes of bloom I ever saw, but, what is perhaps of greater importance considering the size and vigour of the bulbs, they retained their lower leaves on the flower-stems quite green until new leaves were pushing up; whereas in hot, sunny positions the leaves on the flower-stems are usually withered, even before the flowers fade. I would recommend admirers of this delicate and stately flower to try a portion of their stock in various aspects and positions, and I feel sure that a partially shaded one will give the best results. Briefly, this Lily likes a porous, light sandy soil, shelter from scorching sun-rays and violent winds, and, above all, transplanting when the old leaves begin to fade, or, rather, just as new ones are about to push up. The resting period is very brief.—J. G.

GARDEN FLORA.

PLATE 450.

HYBRID EPACRISES.

THE accompanying plate represents some of the most beautiful of garden Epacris, of which, thanks to the skilful hybridist, we now possess a host of great value for decorative purposes. Since the introduction of the first species from Australia, now almost a century ago, Australian Heaths, as they are sometimes called, have always held a foremost position amongst garden plants, and although not now so generally grown as they were a little time back, in the days when hard-wooded plants were everywhere popular, they are unclichéd by the majority of greenhouse subjects now cultivated, and will find favour long after many of these are discarded. As is the case with their African cousins, the Ericas, the original species of Epacris have been employed by the hybridist with such good effect as to obtain from them a race of superior kinds for garden purposes, and the species have therefore almost totally disappeared from cultivation, as will be seen by the list of cultivated kinds here-with appended. That the species would freely intercross is evident from the difficulty experienced by botanists in circumscribing them by any definite characters, as nearly the whole of the twenty-six species known seem to pass into each other by small gradations. Of these twenty-six species, all but four are found only in the cooler regions of Australia, these four being natives of the adjoining country, New Zealand. There are no Ericas in Australia, their place being filled by the Epacris.

As regards cultivation, Epacris require a little extra attention, the special treatment necessary for Ericas being with slight variation suitable for them. As their propagation is a somewhat tedious and slow operation, it is always best to begin in the cultivation of Epacris by obtaining from some nursery, where they are well grown, nice stocky little plants in 4-inch or 5-inch pots, early spring being the most favourable time for this. In February or March all the winter flowering kinds should be cut in hard, the whole of the flowering growths being removed to within an inch or two of the base, and the stronger of the barren ones

pinched back. By placing plants thus treated in a warm, light greenhouse and keeping them moist about the tops, and withholding water for a little while from the roots, they will at once break freely into growth, when those plants which require more pot room should be repotted, using for this a mixture of good peat and silver sand, five parts of the former to one of the latter. Carefulness to provide good drainage should not be overlooked. The soil must be pressed in firmly about the old ball, which ought not to be disturbed beyond removing the drainage from the bottom. Warmth, moisture, and all the sunlight possible should be allowed these newly potted plants as well as those which do not require a shift into a larger pot. The object of this extra amount of warmth and moisture for Epacris is to induce them to make strong and long growths, and if the sunlight and ventilation are properly attended to, the first step towards well furnished free flowering specimens by the end of the year is thus secured. As the growth matures more air may be admitted, until by the end of July the plants may be removed into a frame where they can be exposed during warm weather. Finally in August a position altogether exposed, but if possible where the mid-day sun would be excluded from them, will be a suitable one for Epacris treated as above. In no case should the young growths be stopped after April, unless it be those kinds which flower in spring, and therefore are later in starting into new growth. It is only the stout, long shoots which have been properly matured and ripened through exposure in autumn that flower well, and if the shoots are late they neither grow stout nor long, nor do they ripen properly, so that late stopping for Epacris is not advisable. Close pruning, an early starting into growth—under conditions such as are favourable to quick, yet sturdy development—and exposure to air and sunlight in the autumn are the conditions most favourable to the successful cultivation of Epacris. For the erect growing kinds the pruning in spring should be severer than is necessary for those kinds whose shoots are more or less pendent, such as *miniata*, *Eclipse*, and *grandiflora*. These flower in spring, and their shoots do not grow to such a length in one year as do those of the others. Beyond this the treatment for the last-mentioned kinds should be similar to that advised for the others. It is hardly necessary to point out that with Epacris, as with Heaths and the majority of other hard-wooded plants, the use of the watering-pot must not be more frequent than would be sufficient to keep the soil moist without its ever becoming soddened or sour. When water is given let it be in sufficient quantity to permeate the whole of the soil, and do not give more until the soil is nearly dry again; on the other hand, avoid the other extreme of excessive drought, which is at least as disastrous to hard-wooded plants as too much water. During the winter many of the Epacris will bloom, and they may then be placed in the conservatory or cool greenhouse until they have done flowering. All through the winter a light, airy house or frame, from which frost is just excluded, will answer for Epacris. After they have flowered the above routine may be again commenced. If flowers are wanted early, any of the kinds of Epacris may be subjected to forcing without the slightest injury to them, as they force freely without being at all weakened by extra heat and moisture in winter. All the kinds are useful



NEW VARIETIES OF EPACRIS.

for cut-flower purposes, as their flowers last for at least a week when placed in water, and the grace and beauty of the thickly-crowded flower-shoots render them of great value for decoration. The following list comprises a selection of the most distinct and useful kinds, those marked thus * being what are considered most beautiful; the italics denote the true species, and the remainder are of garden origin:—

* <i>alba odorata</i> , white, sweet scented	* <i>Lady Penmore</i> , white
* <i>ardenti sima</i> , crimson	<i>lineata</i> , rose, pale tipped
<i>Atticiana</i> , rose and white	* <i>Lowi</i> , red, white tipped
* <i>Butt-rfly</i> , carmine and white	<i>magnifica</i> , rose
<i>campanulata</i> , lilac-rose	* <i>miniata</i> , rosy red, white tipped
<i>carminata</i> , carmine	* <i>m. splendens</i> , rosy red and white
<i>Copelandi</i> , scarlet	* <i>Model</i> , rose
<i>coruscans</i> , dark red	* <i>Mont Blanc</i> , white
<i>del cata</i> , rose and white	* <i>Mrs. Pym</i> , rose
<i>densiflora</i> , rose and white	<i>multiflora</i> , red and white
<i>Devoniana</i> , crimson	* <i>nivalis</i> , white
* <i>Eclipse</i> , scarlet and white	* <i>onostachya</i> , white
* <i>Fireball</i> , deep scarlet	* <i>o. flore-pleno</i> , white, double
<i>fulgens</i> , red	<i>pallida</i> , flesh-coloured
<i>grandiflora</i> , red and white	<i>picturata</i> , rose
<i>rubra</i> , red and white	* <i>Queen Victoria</i> , white
* <i>hyacinthiflora</i> , rose	<i>racemosa</i> , carmine
* <i>h. carminata</i> , carmine	* <i>rubella</i> , purplish rose
* <i>h. candidissima</i> , white	<i>rubra superba</i> , red
* <i>h. fulgens</i> , scarlet	<i>salmonia</i> , light salmon
* <i>h. rosea</i> , rose	* <i>Sunset</i> , purplish red
* <i>igneus</i> , rose	* <i>The Bride</i> , white
* <i>impressa</i> , rose	<i>variegata</i> , rose and white
* <i>i. carnea</i> , deep pink	* <i>Vesta</i> , white, pink tipped
* <i>i. coccinea</i> , scarlet	* <i>Vesuvius</i> , scarlet
<i>Kinzhornii</i> , carmine and white	* <i>Vic untes</i> , light, scarlet
* <i>Lady Alice Peel</i> , salmon and white	<i>Waltoni</i> , flesh-coloured

B.

* * Our plate was drawn in Messrs. Veitch's nursery, King's Road, Chelsea, last March. All the varieties shown in the plate are new. Their names are *Diadem*, the deep rose-pink spike in the centre of the plate; *Princess Beatrice*, the sort to the right of the centre spike, and the sort below it is *Rose Perfection*. The white kind is *Her Majesty*, while the deep pink spike above it is called *The Premier*.—ED.

Red, white, and blue flowers.—What I regard as three of the very prettiest, best flowering, hardiest, and altogether showiest flowers of the hardy border about midsummer are the bright rosy red *summer Pink*, the white variety of the same plant, and the *Myosotis sylvatica*, really the best, taken all in all, of the *Forget-me-nots*. Those who are fond of plenty of pleasing colour in their beds in early summer cannot do better than plant plenty of these three. We have all the best hardy plants, but I must say that the borders and rockery are never so bright and gay as when these are in flower. None of the colours are glaring, but they impart a sunny brightness to a garden that pleases the eye. There are several varieties of the rosy-coloured fringed *Pink*, and all are good. Both it and the white have the same free habit of growth, and both literally produce sheets of bloom. The plants grow fast too. Cuttings of the young tops, inserted under a handlight or a cloche in June, will be ready for planting out in autumn, will flower the following summer, and the second year will produce a mass nearly a yard across. Afterwards they will require to be shorn in to keep them within bounds, but they will live for many years. There are numerous varieties of the *summer Pink*, but it is the common type that is here meant, of which one of the best is *Highland Queen*. There is only one really good white, the common, old-fashioned variety. The blotched variety is also good. The *Forget-me-not* mentioned (*M. sylvatica*) is a strong growing variety of the common *Forget-me-not*, and is well adapted for garden culture. It grows about a foot high, comes in flower in May, and with us, at least, is not over till August. It thrives in a dry or moist soil, and produces an astonishing quantity of flowers of a beautiful turquoise-blue, and when associated with the *Pinks* above mentioned, the general effect is rich and pleasing in the highest

degree. For this reason we grow more of these three plants than of any other single species.—J. S.

GARDEN IN THE HOUSE.

ORNAMENTAL GRASSES.

As recently observed by a writer in *THE GARDEN*, many Grasses, even common ones, are worthy of being grown for their ornamental qualities, especially for table decoration. Besides the different uses enumerated by the writer in ques-



The Cat's tail and other Grasses.

tion, we grow some kinds in pots, and employ them for the embellishment of the conservatory, where their light delicate forms harmonise in a pleasing manner with those of the ordinary occupants of such structures. The kinds which we principally grow for this purpose are the different sorts of *Quaking Grass* (*Briza*), some of the smaller sorts of *Agrostis* (especially *A. pulchella*), *Lagurus ovatus*, whose white cotton-like heads of flowers are very distinct and pretty, and the lovely *Feather Grass* (*Stipa pennata*). For this purpose we sow the seeds early in spring in 6-inch pots, and then place them in a frame. A slight heat will assist their germination, but it must not be continued after they are above ground, otherwise weak and attenuated growth will be the result. As soon as ours show themselves plenty of air is given whenever possible, and as the pots become full of roots we give them a little manure water occasionally. In other respects they get but ordinary care and attention, the principal point to be considered being to see that they do not get too dry at the root, for if that happens the foliage soon wears a sickly hue and the beauty of the Grass becomes lost. The *Brizas* are especially susceptible of drought. In sowing the seed care must be taken not to sow too thickly. The *Quaking Grass* and *Lagurus* dislike being transplanted, though the *Agrostis* and *Stipa* will

succeed very well if pricked off in little clumps when about an inch high. The bearded *Hordeum jubatum* is also very pretty, but it does not last long; its flower-heads soon drop to pieces. We sow a few rows of a great many Grasses in the open ground, and find them extremely useful in a cut state. P.

FLORAL DECORATIONS.

No ONE with any pretensions to good taste can raise the slightest objection to the views so ably expressed by "W. N." on the arrangement of foliage with flowers for decorative purposes, unless he happens to have the misfortune to possess some practical experience of the difficulties connected with floral decorations. Artists in oil or water colours, in pencil or pen and ink, are either ignorant, or write as if they were ignorant of the facts, first, that flowers and foliage will not revive after they have been a certain time out of water, and secondly, that if put into water within that period, they will only last fit to be seen for a certain time. Let us call the first period of time the drooping interval, and the second period of time the reviving interval. The length of the former of these intervals has an important influence upon the length of the latter interval, since flowers put into water soon after they are cut revive more quickly than those kept some time out of the water, and also last longer, unless they happen to belong to the orders *Labiata* and *Scrophulariaceae*, many of which have the objectionable habit of dropping their flowers. There is another fact too often overlooked, which is that, generally speaking, the foliage of a plant will not when cut last so long as the flowers, by which I mean that the drooping interval is shorter and also that the reviving interval is shorter. The remarks of "W. N." are based upon the arrangements at the last evening fête at the Botanic Gardens in Regent's Park; let me therefore take the case of exhibitors from a distance who had to decorate dinner-tables there. Many a table has been shown there by persons living as far off as fifty miles from London. Supposing that they were able to cut their leaves so late as five o'clock in the morning, it would be nearly noon before they could be put into water; then everything must be arranged for the judges, by which time the leaves that have survived the drooping interval would be about at their best. From that time onwards faded leaves would be more and more numerous every hour, until the time arrives for the public to be admitted, when there would not be a single table fit to sit down to dine at. It is not that decorators object to use leaves off the same plants that provide them with their flowers; it is that they know from their own experience, or from the experience of others, that those leaves are useless to them, since they will not last the time. I am not alone in having seen, in many a private house, arrangements of flowers far more lovely and natural than were ever seen at any flower show, and this cannot be helped. Where flowers are put into water at once, where the drooping interval is a question of minutes instead of hours, then arrangements may be carried out which are impossible at flower shows. All the fine writing in the world will not make a leaf last half an hour longer than the period at which it usually begins to fade, and, therefore, those who are required to arrange flowers and foliage which must look well at the end of even six hours after they are cut naturally take *Fern* fronds, which they know will last well, in preference to what they know will fade. I wish I could spare the time to examine and report on the lengths of these drooping and reviving intervals with many kinds of foliage which decorators would be only too glad to use. If some of those who write so glibly about artistic and natural arrangements would kindly give some illustrations of combinations not often seen, stating first how long was the time that the leaves were out of the water, and secondly how long it was after they were put into water before they began to fade, they would be doing good service, and find their opinions more valued than they are at present.

Tonbridge.

W. THOMSON.

INDOOR GARDEN.

CHRYSANTHEMUM CULTURE.

MANY treat Chrysanthemums as plants requiring but secondary attention compared with other subjects with which they have to deal. Others neglect them in their younger stages, omitting to pinch at the proper time or to keep them growing by potting them on as required. As has been recently stated in THE GARDEN, Chrysanthemums should by this date have been placed in their flowering pots. If, however, they have been growing in pots sufficiently large to afford all they require, the final potting may still be done with every chance of success, provided it be not longer delayed. Aphides and earwigs often attack the points of the young shoots and the flower-buds in their early stages. The former should be destroyed by fumigating or syringing with an insecticide as soon as detected, and the latter must be carefully looked for and hand-picked. Chrysanthemum flowers are invaluable in a cut state and the plants for decoration during the later months of the year. If good results are to be obtained they must receive liberal treatment from now until the flowering period. The principal growths are made in July and the two following months, a somewhat cooler and moister atmosphere, especially at night, being suitable for their development. It is surprising what large plants can be obtained from cuttings put in in February if kept growing on and finally potted in the beginning of July.

LARGE SPECIMENS.—In order to obtain these, some place three plants in a pot of 12 inches or more in diameter. Such pots are much too large for Chrysanthemums generally, as they do not succeed nearly so well as when somewhat restricted at the root and are well fed when most nourishment is required, viz, from the time when the buds are formed until they begin to open. No advantage is gained by having three plants in a pot; one will in most cases grow quite as large if liberally treated. Pots from 8 inches to 10 inches in diameter are sufficiently large in which to grow good-sized plants, and these are much to be preferred for moving about and for use in positions where larger pots would be unsuitable. Some may think it immaterial whether clean or dirty pots are used, but this is a mistake. All plants succeed best when placed in clean pots, and a notable difference may be observed in the case of Chrysanthemums where both clean and dirty pots have been employed. The loam used for them should be rich, rather heavy than otherwise, and mixed in the compost as broken up. A good proportion of cow manure, not too fresh, is probably the best form of manure that can be used for them, as it tends to keep the roots cool and moist. An addition of a little soot greatly assists in keeping the leaves good in colour. The plants should be placed rather low down, allowing room for a top-dressing later on. Plants intended for large specimens should be placed from 2 feet to 3 feet apart in an open position, fully exposed to the sun, but, if possible, sheltered from strong westerly winds that are generally prevalent in autumn. A temporary stake should be put to each plant when potted, and this must be replaced by a permanent one when the plants are established. Beds of ashes are best suited for plunging Chrysanthemums in, as all superfluous water can escape freely through them. It is very important that the plants have a plentiful supply of water at all times, and a good overhead syringing every morning and evening will be found beneficial. Some recommend applying manure water at nearly all stages, but it often tends to produce a much more sappy growth than is desirable. It is better to add sufficient manure at potting time to sustain the plants until the flowers are formed, when manure water or artificial manure of almost any reasonable strength may be applied without injury.

SMALL PLANTS.—Any duplicates that may be left, especially of the better varieties, are worth planting out in the reserve ground for future propagation, or in the mixed border, where they will produce a quantity of flowers if the autumn be

mild. The tops from such plants, if put in as cuttings about the middle of August, will root and flower freely in comparatively small pots at the usual time. The best system is to place four or five cuttings each in 3-inch pots; place them in any frame where they can be kept close until rooted, afterwards potting on bodily into 5-inch or 6-inch pots. The smaller flowered varieties are best suited for growing in this way.

STANDARD CHRYSANTHEMUMS should receive their final potting earlier than those grown as bushes, as a considerable time is taken up in forming the stem. Some growers may have their bush plants in a forward condition at the present time, but it is a questionable advantage, as the soil becomes exhausted sooner than in the case of those potted at a later period, and if great care be not taken the majority of the lower leaves will fall before the flowers expand. If large plants with plenty of flowers are to be obtained, no further pinching must now be practised. Let growers be induced to give Chrysanthemums the attention to which such plants are entitled, and they will be amply rewarded, if the season be favourable, with a profusion of flowers during autumn and winter. J. G.

BENCHES FOR GREENHOUSES.

WE have of late had in America quite a discussion on benches for greenhouses. Mr. Peter Henderson simply covers the bench with common roofing slate instead of lath, and puts a thickness of cement on the slate. My bench costs much less and I find it to be equally good. Boards and other timber are cheap with us, and I can build my bench as cheaply as the commonest board bench can be built. Gardeners who have seen my benches are adopting the plan, and all who see them or have tried them are in favour of them. First, I make the posts or supports of 3-inch by 4-inch Hemlock Spruce. I cut them to length, and dip the end in a pot of paint. This end I rest on a brick, the brick being bedded above the surface of the ground. I next notch into the post 1 inch deep for a cross bearing 3-inch by 4-inch joist. On this cross bearer I lay my hot-water pipes up close to the under side of the bench. This gives good bottom-heat to the pots. I next lay on the top of the posts lengthways of the bench a 3-inch by 4-inch joist. Then I cross the bench from this joist to a back support with 4-inch by 1½-inch Spruce strips placed 16 inches apart. On these Spruce strips I nail common masons' laths, such as are used for a lath and plaster partition in a house. The laths should be a little distance apart so as not to touch each other. I next cover these laths with 1 inch of cement concrete, formed of equal parts of cement and coarse sharp sand. Then I cover the bench with from 1 inch to 4 inches of coarse sand. In the 4 inches of sand I plunge the pots, and I get a hotbed heat in this way for the roots. I have benches built on this plan for three years, and the laths are not discoloured. If water settles on any part, I open holes between the laths and between the cross supports. The cost is the same as that of a common Hemlock board bench. I always put a 5-inch board strip on the edge at the back of the bench, 1 inch from the side of the house, and I turn up the cement against this strip. This keeps the moisture of the bench from rotting the house, and allows the hot air to come up on the back of the bench. On the front of the bench I nail a board in the usual way. Under my benches by the side of the path I grow Ferns and Caladiums to use for cut flowers. They grow finely.

Brooklyn, N. Y.

F. SCHOLES.

Nicotiana affinis.—This is an interesting plant in more points than one. In the first place, the flowers close up in the daytime until two or three days old, and then they remain open until they fade. It has also the singular property of only emitting its fragrance at night, when it is very powerful. It is, moreover, an excellent plant for house decoration, as it does not require so much light as some other plants, and it will last in good condition for six weeks. A plant of it which

I had in a sitting-room for several weeks in spring had the stem cut down to within 8 inches of the pot, and then it was placed on the greenhouse stage. After a few weeks' rest it began to grow again, and to push forth three branches from the stem, which very soon came into flower. It was taken again to its place in the sitting-room, where it bloomed even better than at first. I have also had plants in flower raised from seed sown early in the spring, and these, with a little management, may be made to flower again in the autumn, or even later, with the assistance of a little warmth.—J. C. C.

Large-flowered double Fuchsias.—For small pots these Fuchsias are by no means well suited, and even for pillar plants, in the conservatory or in similar structures, some of the free-growing, small, or medium-blooming kinds make a better and more lasting display than kinds with abnormally large flowers, yet these latter are worth growing for the sake of variety; indeed, admirers of huge blooms view them with special interest. It is now many years since a tall, straggling kind, with large dark-coloured flowers, called Norfolk Giant, made its appearance; but the blooms were borne so sparingly that it never became popular. More recently we have had Champion of the World, an upright-growing variety, with a large double corolla of a dark purple colour. The stalks of the flowers in the case of small plants of this sort are, however, too long to set off the blooms to the best advantage; but better results are obtained when the plant has plenty of room in which to develop itself. This is an English raised variety; but one from the Continent (Phenomenal) is about its equal as regards size, and of rather more sturdy growth; still, even it is better suited for a pillar than for a pot plant, though in 8-inch or 10-inch pots it flowers fairly well, the huge, massive blooms being then very striking. Another free-growing kind is Nouveau Mastodonte, a sort with a purple corolla flaked with red, and, like the two preceding, of upright, vigorous growth. Among light-coloured flowers there are none with massive blooms; but amongst those with white corollas, Madame Jules Chretien forms a good companion for those just named. Of a less vigorous constitution, and therefore better suited for pot culture, may be named Avalanche and Miss Lucy Finnis among sorts with white corollas, and Alphonse Daudet and Avalanche among dark kinds. The fact of two standard varieties being named Avalanche will show the great confusion that crops up through each raiser naming his plants according to individual fancy.—H. P.

Camellias.—We have experienced considerable trouble this year in keeping our Camellias free from fly, vigorous syringings daily with an occasional fumigation being absolutely necessary. This fly must be nearly related to the Cherry pest, for it is a troublesome customer to dislodge when it once gains even a slight footing; its manner of attack also strikes me as very similar to that of the black fly. The very bright weather which we have had has burned a few leaves at the apex of the roof, where we cannot ventilate thoroughly; the exceptional amount of sunshine which we have had will, however, be conducive to an early ripening of the wood; indeed, I find the young growth already getting firm and the foliage leathery. The variety called Woodsi should find a place in all houses where plenty of bloom is required. It is very free and bright in colour, in the latter respect something in the way of conspicua, but the flower is much better shaped. It has also the merit of standing rather longer after it is cut than other varieties. Our plant of conspicua is remarkable as having come from Napoleon I.'s garden in Corsica. It is a fine variety, and where it can have plenty of room should not be omitted when a selection of Camellias is made for planting. The varieties that flower very freely with us and which can always be depended on when planted out to grow quickly into strong bushes are the old Double White, the French White, Woodsi, conspicua, Bealii, Chandleri, and Donkelaari. Our smaller plants are eximia, fimbriata, Lady Hume's Blush, and I think Saccoi Nova. These form a

selection which, although deficient in quality compared with newer varieties, are not behindhand as regards quantity of flowers. They give us, in fact, a constant supply for nearly six months.—E. B.

IXIAS AND THEIR CULTURE.

THE genus *Ixia* as defined by botanists is composed of about a score of distinct species, most of which have been in cultivation at some time or other in gardens in this country. As in the case of Crocuses, Tulips, Narcissi, and other genera of bulbous plants which have been long cultivated for their ornamental flowers, the *Ixias* have been crossed and recrossed one with another, both naturally and artificially, to such an extent as to have given rise to what are termed numerous garden forms, and in by far the majority of these the distinguishing characters of the original species are no longer traceable. It may, however, be interesting to mention those species which have played the most important part in the production of these garden varieties.

SPECIES.—In the early volumes of the *Botanical Magazine* no fewer than seventeen species of *Ixia* are figured, that is if we include the *Morphixias* with the *Ixias*, as is done in the "Genera Plantarum." These are *I. polystachya*, flowers medium size, pure white; *I. flexuosa*, flowers small and variable in colour; *I. hybrida*, flowers white with



A bunch of *Ixia* flowers.

a purple eye; *I. fucata*, a slim species with grassy leaves and a two-flowered spike of small whitish flowers; *I. aristata*, flowers large, deep rose with a pale eye; *I. lutea*, flowers orange-red; *I. patens*, flowers large, of a uniform deep crimson colour; *I. speciosa*, flowers large, incurved, deep crimson within, paler on the outside; *I. maculata*, flowers large, variable in colour, but always with a blotch of deep purple at the base of each petal; *I. columellaris*, flowers medium size, petals narrow, bright red with a purple-maroon blotch at the base; *I. viridiflora*, flowers large, emerald-green, the eye almost black, anthers yellow; *I. monadelpha*, flowers large, blue, purple, yellow, or white, but always dark-eyed, anthers united to the top; *I. curta*, flowers large, petals broad and rounded, red with a zone of purple at the base. The following are what have been called *Morphixia*: *I. capillaris*, flowers medium size, tubular, blue, purple, or red; *I. linearis*, leaves narrow and hair-like, flowers singly on drooping scape, campanulate, pale rose; *I. aulica*, flowers medium size, turbinate, flesh coloured; *I. paniculata*, flowers on tall spikes, tube very long and slender, creamy yellow (this is often called *I. longiflora*). Besides these there are *I. anemonæflora*, a large-flowered species, of variable colour; *I. campanulata*, and one or two others. The whole of the above are supposed to be good species, but how far their characters would hold good compared with the hosts of wild forms known to exist in their

native country (the Cape) we need not stay to discuss. Certain it is that few of them come true from seed, and that they all cross and recross with the greatest freedom, so that by cultivating a selection of the most distinct in a bed or frame together and raising plants from their seeds numerous varieties may be obtained. Under these circumstances, it might be well to class them under the heads of three races, as is proposed by Mr. Baker, in the following manner: Group 1, flowers with a large blotch at the base of each petal; group 2, flowers without a blotch on the petal; group 3, the *Morphixias*. As will be seen by the description of the flowers of the above species, the genus *Ixia* is rich in colours, almost every shade, from white to purple, and green to yellow and blue, being represented.

GARDEN FORMS.—In many of these the variation in the flowers is of the most strikingly beautiful description, so that in a bed of mixed *Ixias* we find an endless variety of shade and colour. Both at the Cape and in the Scilly Islands, in France and in the Netherlands, *Ixias* are grown on a large scale for the supply of the bulb market. In England the cultivation of these plants out of doors does not meet with much favour, owing to the unfitness of an average English season for their growth and the production of flowers. In a few nurseries, however, and in some private gardens in the south very fair success has been met with in the out-of-door management of *Ixias*. A warm, sandy border under a south wall, or, better still, a raised bed with sides of turf or boards, so that protection from autumn rains is possible, are the most suitable positions for the cultivation of *Ixias*. In this protection from heavy rains during the time the bulbs are at rest lies the secret of success in the outdoor cultivation of *Ixias*, and, indeed, of by far the majority of Cape bulbous plants. It is during the heavy rains at the Cape that the country is made gay by the myriads of bulbous plants which under the influence of warmth and moisture spring up and flower everywhere. After the rains come a period of drought, when all the flowers are over and the leaves withered, and the bulb lies resting and preparing for the return of the moist season. The protection above mentioned is therefore necessary if we would have our planted-out Cape bulbs flower a second year.

OUTDOOR MANAGEMENT.—The points to be attended to for the outdoor management of *Ixias* are as follows: Plant the bulbs late in autumn in a well-drained sandy soil, burying them to the depth of 6 inches. Protect from heavy rains all winter and from severe frosts. Early in spring the leaves will begin to peep up above the soil, when rain will be no longer harmful. The cold winds and nipping frosts of an English spring are against the well-doing of *Ixias*, so that protection from these will be necessary if a good crop of perfect flowers is to be insured. From May until the middle of July the display of flowers produced by *Ixias* treated in the above manner ought to be most satisfactory. The ripened seeds may be gathered and sown in frames, and the bulbils produced annually may also be removed and used to extend the stock of these plants.

AS POT PLANTS for the decoration of the conservatory and cool greenhouse, *Ixias* may be employed with gratifying results. The bulbs should be potted in autumn, placing about half-a-dozen bulbs in a 5-inch pot in a mixture of loam and leaf-mould. A cool frame with an ash bottom is a suitable place for these pots to stand in until the spring; the soil meanwhile should be kept moist, and more especially after growth has commenced, or brown and unsightly foliage will result. When the flowers show, a position exposed to full sunlight, and where the plants may be protected from cold at night, is necessary. When properly managed there is no floral picture that surpasses a group of *Ixias* of various colours, and as the bulbs are always cheap, it is worth while buying a fresh stock annually for pot purposes, planting the bulbs in a sheltered border out-of-doors as soon as they have flowered. Philip Miller cultivated a collection of *Ixias* at Chelsea, and,

judging by the cultural notes which he published in his dictionary concerning them, he must have understood their requirements quite as well as they are understood at the present day. He says: "All the sorts multiply very fast by offsets, so that when once obtained, there will be no occasion to raise them from seeds, for the roots put out offsets in great plenty, most of which will flower the following season, whereas those from seeds are three or four years before they flower. These plants will not thrive through the winter in the open ground in England, so should be planted in pots and placed under a frame in winter, where they may be protected from frost, but in wild weather should enjoy the free air; but they must be guarded from mice, which are fond of their roots, and if not prevented, will devour them." B.

Saxifraga Stracheyi.—Owing to its flowering very early, this is a useful plant for greenhouse decoration during the first months of the year. It is one of the large-leaved Saxifrages, by some called *Megaseas*. The flower-stems are much branched and spreading, while the individual blossoms are large and white, with a reddish centre, but when grown under glass they are almost wholly white. The entire flower-stem only reaches a height of 6 inches or 8 inches. Our plants were grown in 6-inch pots, and about Christmas removed to the shelter of a frame, where without any heat whatever they came finely into flower by the end of January. Grown in this way, the flowers do not suffer, as they sometimes do, from cutting winds when allowed to expand in the open ground.—T.

The new *Mimuluses* certificated by the Royal Horticultural Society some time ago are very pretty. The variety named *M. grandiflorus* is in general character much the same as Harrison's Musk, a plant now extensively grown, but the flowers are wholly of a clear rich yellow. We have some specimens of it in 5-inch pots one mass of bloom, and much admired. In another variety (*ruber*) the colour of the flowers is a reddish buff, but in other respects it resembles the last named, and is equally floriferous. Both the above are strongly Musk-scented, and are classed with *Mimulus moschatus*; but a third kind belongs to the large-flowered type of *Mimulus*, in which the scent is wanting. The flowers, which are of good size, are well shaped, and their colour a uniform rich glowing crimson, very different from the quaintly spotted types with which we are all so familiar. The large golden-flowered Musk is said to be a desirable bedding plant; time may be needed to prove its adaptability for this purpose, but no doubt can be entertained of its value as a pot plant for greenhouse decoration. Its propagation and requirements are simple in the extreme, the essential point being never to allow the plants to become very dry. A border of fairly good soil in not too hot and dry a spot, if devoted entirely to the different sections of *Mimulus*, would keep handsome and attractive throughout the summer.—H. P.

5221.—**Chrysanthemums** are amongst the freest rooters of all cultivated plants, and although to some extent with them, as with most things that will bear their roots confining, much may be done by constant manual feeding, such as by giving manure water regularly; still, there is a limit in the extent to which this can be carried, with a possibility of seeing the plants according to their kind in anything like the condition to which they are capable of being grown. The *Chrysanthemums* mentioned as having been procured last autumn in 5½-inch pots had, no doubt, been late struck shoots, or shoots that had been layered, and when rooted put in the pots, by either of which methods they would bloom, the flowers being proportionately fewer than if the plants had been struck earlier and grown on with as much room as they required. They were thus in a very different condition last season from that at present: To have made the best of the plants after the old flower-stems had been cut

away, as stated, cuttings should have been made and struck of the young shoots that would spring up, and have been grown on for blooming this autumn; or the means of striking these not being at hand, the plants after having the old shoots cut away and their roots reduced in the way named by "Myrtle Grove," should have been put in 7-inch or 8-inch pots, and when those were full of roots in others 4 inches or 5 inches larger, giving them plenty of liquid manure as soon as they were well established; in this way they would have made large specimens, producing quantities of flowers proportionate to the more or less free-blooming disposition of the varieties. Where small plants, such as those in question are represented to have been last year, are wanted, they can only be had satisfactorily by late striking, or layering in the way I have indicated. Old plants will not conform well to being kept in such little pots.—T. B.

Begonia Roezli.—As a winter bloomer, this Begonia possesses great merit. It is seen to best advantage when grown in the form of good-sized specimens; it is tall in growth and branches sparingly, so that in small pots it has a leggy appearance, while when strong, the numbers of shoots sent up from the base give it a better developed appearance. In common with most of its class, a moderately rich and open soil suits this Begonia perfectly. We use a compost consisting of two parts turfy loam, and one part each of leaf-mould and decayed manure, with a fair admixture of sand. Its propagation from cuttings is not so simple a matter as that of most other kinds. Leaves will not grow, and even when cuttings of the shoots are put in, many of them frequently damp off. The most successful way to strike this Begonia is to take the young shoots that are produced after a plant has been cut back. Put them singly into small well-drained pots of sandy soil, and keep them close in a stove temperature till rooted. In selecting the cuttings great care must be exercised, as, if too succulent, they will damp off at once, and when allowed to get hard they will stand for months without rooting. This Begonia may also be increased in great numbers from seed, provided the blooms are fertilised artificially; but seedlings vary somewhat in the hue of the blossom, and, if raised from the deepest coloured type, many of them will be much paler than the original, so that in order to perpetuate the best variety, cuttings are to be preferred. Its lanky habit forbids its use as a decorative plant in a small state, for in a 5-inch pot it runs up slender, with a few leaves and flowers on the top, the whole then being by no means of a prepossessing appearance. Such a desirable plant, as a matter of course, has already attracted the attention of hybridisers, and a couple of varieties announced as novelties by M. Lemoine, of Nancy, said to be the result of a cross between *B. Roezli* and the popular *B. semperflorens*, should be decided acquisitions, as a dwarfier and more branching character might be expected from them. The names of the above-mentioned two are *B. semperflorens gigantea rosea* and *carinata*, the difference being in the colour of the flowers.—H. P.

SHORT NOTES.—INDOOR.

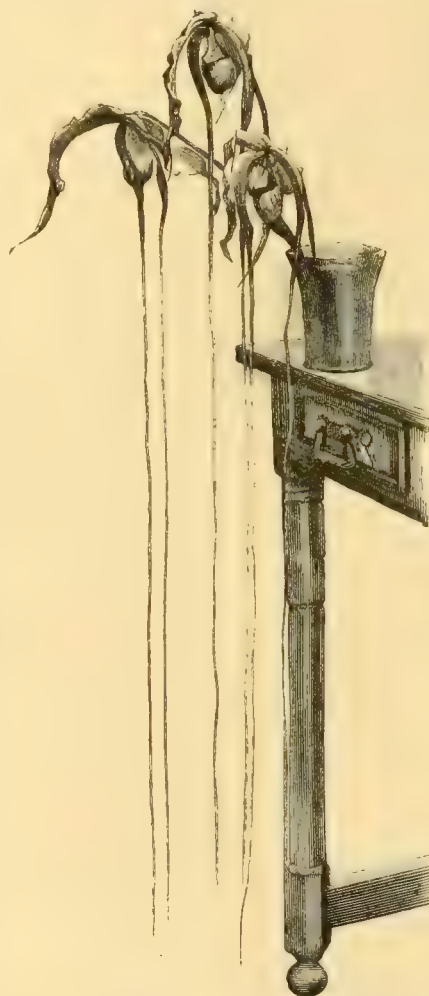
Pelargoniums for winter bloom.—From now until housing time these should have the sunniest situation at command, for on this mainly depends the future flower-bearing power of the plants. The last week in July is late enough to shift for the last time, as it is very important that the pots be full of roots by autumn.—J. C. B.

Old Cyclamen bulbs.—Now is the time to shake away all the old soil and repot. Let the soil be free and well sanded and give good drainage. Water very moderately and shade from hot sun. An easier way is to lay them in a cold frame, allowing them to make their growth there and potting up in September.—J. C. B. *Byfleet.*

New Bromeliads.—*Echmea disticantha* and a hybrid *Pitcairnia* were recently exhibited by M. Ed. André before the French National Horticultural Society. The first comes from the province of St. Paul, in Brazil. The latter is the result of a cross between *Pitcairnia Altensteini* and *corallina*, and has been named *P. Maroni* by M. André. The foliage is intermediate between the two parents, and the flowers are of a fine red bordered with white.—J. CORNHILL.

GLASS STRUCTURES.

WE know of no subject upon which the owner of a garden has so much need to reflect carefully before building as upon the erection of glass structures, otherwise much expense may be incurred to little purpose. The planning and arrangement of such structures are often bad. The first and main error commonly committed consists in beginning without any notion of the extent to which the range of glass may finally reach; the result is that first one house is dotted down in one place, and another in another, until the end is a biggledy-piggledy arrangement, causing an infinite amount of trouble and loss. If owners of gardens only knew how much better and cheaper it is to have everything handy and convenient, they would scruple less about the little extra cost of such provision at the outset. It is just as easy



Cyrtopodium caudatum. Grown at Clovenfords. Length of tail-like sepals, 33½ inches. (See p. 73.)

to set to work in the right way as the wrong, no matter whether the garden be large or small. It is impossible to give instructions that will apply everywhere, so much depends upon circumstances; but in erecting glasshouses, whether few or many, they should at least be all near to each other, and attached to each other if practicable, so that the whole of them can be walked through without going out of doors; and the range should also be attached to a shed behind or near, which can be entered by a back entrance from the houses, and in this shed all potting and other conveniences in connection with plant culture should be provided, including the means of keeping the potting room at a suitable temperature in cold weather. An unheated potting shed is an almost useless structure at certain seasons of the year. All doors and paths should be of good width, sufficient to admit

a wheel or hand barrow, so that everything may be loaded and unloaded indoors without risk. Water should be provided in every house by means of cisterns and ball taps, and ready means should be at hand for heating the water to any desired degree. These things may just as well be done as not; and, if seen to at the beginning in a methodical way, do not cost half so much as when they have to be done afterwards. When they are not done, the inconveniences and mishaps in the management arising therefrom afterwards are likely to be both worrying and costly.

PITS AND FRAMES.—These are the simplest kind of garden structures, but they are put to a multitude of useful purposes, and in small gardens often represent the whole of the glass available for everything. The simplest kind of frame consists of a square or oblong box of any size, about twice as deep at the back as at the front, so that it slopes gently to the sun. The sides and ends of such frames may be fitted with bolts and catches, so that they may be taken to pieces and put together again in a few minutes, according to circumstances. When not in use in winter, they can be conveniently stored in a dry place. The size of a frame must depend upon what is to be grown in it. For Cucumbers and Melons that are planted out for a time, and which spread over the ground, the width should not be less than 5 feet or 6 feet, and the length according to the demand for plants. Any joiner can make an endless frame by making the back and sides in lengths, that can be pieced together as wanted, and the end put on anywhere. For small plants the frame may be only 3 feet wide, but it matters little whether it be wide or narrow so long as so much space is needed, only wide frames need long lights, and these are heavy and inconvenient, and cause more breakage; of course, frame lights are movable. Frames of this kind are very useful, but it is not economy to use them very extensively. They do not endure so long as pits built of bricks do, and they are not so convenient either, and cannot be heated very easily.

BRICK PITS.—These may be the same shape as wooden frames, only they are built deep to hold fermenting materials, and are often heated; the lights also lift off and on. This kind of pit is, however, going out of fashion. They are inconvenient, as they can only be entered or attended to by lifting the lights off, which is not desirable in cold weather, and the breakage of glass through lifting the lights, airing, and by wind is far greater than in the case of fixed roofs. Besides it is found that a pit with a fixed roof, which can be entered by a door, and all the work connected with it done inside far more conveniently and speedily, costs scarcely more than the frame; it is consequently superseding it for most all purposes. Such pits must have a narrow inside path, and must be built a little wider in consequence, but the back wall can be utilised for shelves, so that really little space is lost, while all the work and watering can be done and to much better and more profitable purpose. Pits of this kind may be partially sunk in the ground, say from 18 inches to 2 feet or even more, and they may be lean-to or span-roofed, and are suitable for growing Cucumbers, Melons, bedding plants, pot Vines, Tomatoes, Orchids, and stove or greenhouse plants. There is hardly anything indeed which may not be grown, nursed, or propagated in such small structures, which are excellent feeders for the conservatory or show house. As a rule there are far too few of them in gardens. When they are made on the lean-to principle, they should face southwards, and run with their ends north and south when span-roofed. Lean-to pits are best adapted for the early forcing of fruits and flowers, as they get the sun most in the winter time, and are more easily heated. Of course, houses of large size are built on the same lines as are here described; but I am speaking of what are known as pits, in which the inmates are near the glass, and which are just lofty enough to allow a person to walk upright at the highest part, and from about 6 feet to 10 feet wide. It is in such pits that most of the plants are grown in

nurseries for sale, as well as a great deal of the marketable produce that appears at Covent Garden and elsewhere. They are cheap and suitable for the purpose.

FRUIT HOUSES.—Although we now know so much about the wants of such subjects as the Vine, Peach, Fig, and other fruit trees, there is still much diversity of opinion on the subject of the size and shape of house best suited to their culture, although there need not be. What we have to consider first is the habit of the tree to be grown under glass; that settled, the kind of house and its arrangements are easy. But, unfortunately, this way of looking at the subject is not always thought of. Take the Vine, for example. It is a most accommodating plant in the matter of training, as, owing to its habit, it can be provided with the same space in a low house as in a lofty one, although for other reasons lofty, airy houses are best. It does not matter whether the Vine be trained upwards, or downwards, or horizontally, and hence, unless there are too many plants for the space, a low pit will just hold as large a Vine as a lofty house, wherein the Vine is led up the rafters to the apex. If we remember correctly, the famous Vine at Hampton Court has two main limbs, which run the whole length of the house, equidistant from the top and bottom and from each other, and the secondary limbs are led upwards and downwards from these, so as to cover the roof in every part, and all are equally vigorous. A vinery, therefore, whether span-roof or lean-to, may be either large or small, according to circumstances, and no difficulty will be found in training the Vine to fill it. We are acquainted with fruitful vineries not more than 10 feet by 6 feet and 9 feet high, that have been going on for about thirty years with the same Vines, that look as well now as ever. The advantages of large houses for vineries are, that they can be heated more economically, maintained at a steadier temperature, and ventilated more perfectly.

HOUSES FOR PEACHES and other stone fruits must, however, be made on a different principle. The Peach, Plum, Cherry, or Apricot can be grown quickly and successfully only in one way when trained on a trellis or wall, and that is upright or in an oblique direction upwards, and hence must have room to run out their branches in that direction, else difficulties will arise in a few years. Trees can be and are sometimes trained horizontally, but the plan takes so many years to form a tree, and needs so much skill and attention, that we advise no one to try it. Now, a Peach tree trained flat on a wall or trellis will grow 20 feet high and spread to 40 feet in width in a few years, and to find that space for it, allowing for the lower branches to be depressed, the house must be both high and broad; but whether the trees be trained on the back wall or on a trellis close to the glass, it need not be more than a few feet wide, for we advocate the trees being confined either to the one or the other. Trees both back and front is a bad arrangement, though a common one, and nothing is gained; for the front trees have to be shortened by a half or more to let the light into the back ones, which, owing to the shade of the front trees, cannot be trained lower than a few feet from the top of the wall. Hence neither set can have room to grow to anything like their natural size, and the result is repression of the growth, with its attendant consequences and drawbacks, which only those who have tried both plans fully understand. Peach houses should, therefore, be 12 feet high at the back, but 16 feet or 18 feet is much better, and 20 feet is not a whit too high. Of course, when the trees are trained close under the glass, this length of branch can be got with a wall of any height, just according to the angle of the roof, which angle should not, however, be much under or above 40°.

S. W.

Hæmanthus coccineus is one of the good old-fashioned flowers that one seldom meets with now-a-day, yet it is by no means easy to cultivate, and a few plants of it in pots 7 inches or 8 inches in diameter are very useful in conservatories. I

find it to do well along with the ordinary run of cool greenhouse plants, potted in a mixture of loam, peat, and sand. Its foliage is decidedly ornamental, and the large heads of flowers surmounted by yellow tipped stamens are very attractive.—J. G. H.

ORCHIDS.

ORCHIDS AT CHELSEA.

IN a large collection of Moth Orchids an occasional flowering spray may be found of *Phalænopsis grandiflora* almost at any time, but it is unusual to see it in quantity about the middle of July. In the house devoted to these Orchids, however, at Messrs. Veitch's there are at the present time at least a hundred sprays laden with large snowy blossoms. They usually display their peerless charms when flower and bud are alike destroyed by the murky fogs of a London winter. It was therefore a pleasant surprise to admire them on a stifling hot day in July, with the temperature cooler than that outside. It is surprising to see how freely the pretty *Cypripedium Spicerianum* grows in the lightest part of this *Phalænopsis* house. This Lady's Slipper evidently likes the warmest house, and, like the charming *C. niveum*, the plants do not like to be inserted too deeply into the potting material. They may easily be choked by the mistaken kindness of those who do not quite understand how to pot them. *Cypripedium Robelini*, also in flower in this house, is nearly allied to *C. lævigatum*, but the older species is the better of the two; the new one, which is smaller in all its parts, is, however, very pretty; probably when the plants have become established and have made two or three years' growth in our hothouses the flowers may become larger.

In another house there are some distinct and handsome forms of *Aerides* in flower. We always look for the long gracefully arching spikes of *A. suavisimum*; its fragrant large showy flowers are ever welcome in July and August. *A. expansum* Leonie, a recent introduction, is now beautifully in flower, its long pendulous spikes being densely furnished with very prettily spotted flowers. *A. Houlettianum* is very distinct as regards the peculiar tints of its flowers; it is probable that both these may be forms of the old and well-known *A. Larpentæ*. In this house were suspended in baskets good masses of *Angræcum falcatum*, crowded with their unique snow-white blossoms. This is a Japanese species and the only one that succeeds well in a low temperature.

The large new span-roofed *Cattleya* house is still gay with the last blossoms of *C. Mendeli* and *C. Mossiæ*, while the later flowering *C. gigas* and the various forms of it introduced under other names are coming into flower or have developed their large handsome blossoms. *C. Sanderiana* and *C. imperialis* are both of the *C. gigas* type. Some growers find considerable difficulty in flowering these handsome species and varieties. No doubt some are of a more floriferous habit than others, but in order to obtain good flowering sheaths the plants should have a good season of rest by being kept cool and rather dry at the roots, and when they start into growth they ought to have more heat than the ordinary run of *Cattleyas*, and be placed near the glass. This house seems to be admirably adapted for the growth and development of *Cattleya guttata*. The variety *Leopoldi* had formed growths about 3 feet in length, and one of these was crowned with a handsome spike, consisting of fourteen very dark, densely-spotted and blotched flowers. This is a very free-flowering variety, and distinct from any other belonging to the genus. Large masses of it have been recently introduced, and it is a plant well adapted either for exhibition or for adding a distinct feature to the *Cattleya* house. *C. amethystoglossa*, also in flower, is equally desirable; it is of the *C. Leopoldi* type. They are easily-grown plants, and should be potted in the same way as other *Cattleyas*.

J. D.

***Cypripedium caudatum*.**—The annexed engraving of *C. caudatum* represents a reduced sketch of an extraordinarily fine spike of the long-tailed Lady's Slipper Orchid, which we received a week or two ago from Messrs. Thomson, Tweedside Vineyard, Clovenfords, who grow all kinds of Orchids uncommonly well. The tail-like sepals of the flowers here represented were of unusual length, being 3½ inches from the centre of the flower to the tip of the tail. The spike had a singular appearance, and moreover represented the highest coloured variety, named *roseum*.

***Cypripedium montanum*.**—A native of Western Oregon, &c., grows from 10 inches to 20 inches high; flowers white and veined with purple. This was first called *C. parviflorum* and afterwards *C. occidentale*, by which name it is known in some nurserymen's catalogues. It is readily forced like *C. spectabile*, and, unlike this and other species of North American *Cypripediums*, is deliciously fragrant. It is the only fragrant Lady's Slipper in North America except *C. californicum*, a species not yet in cultivation.

***Odontoglossum crispum*.**—I send you a flower of a very fine variety of this Orchid. The flower is from a fine spray of twelve flowers, all being like the one enclosed. They are spotless, except on the lip, and some flowers on the middle of the spike are even larger than the one I send you; they are fully 4½ inches across. I may add that these flowers have been expanded fully four weeks. This plant, like many of our best varieties, is among the early importations. A great many of the recently imported plants of *crispum* appear to be crossed, and not the species pure and simple.—A. F. GORDON, *The Knoll, Shipley*.

Orchids from Perth.—I send you a spike of *Dendrobium Schroederi*, which I think is very good; also a spike of *Cattleya superba splendens* from one of my four plants which took the first prize at Edinburgh. I also send you a spike of *Cattleya Eldorado*, a pretty little Orchid with a delightful perfume, and a small spike of *Vanda tricolor*, the Glen variety. Some of my *Vandas* not more than 8 inches high have flowered this season well under cool treatment. They have been grown for the last fifteen months along with the *Odontoglossums*.—W. MACDONALD, *Woodlands House, Perth*.

* * Admirable specimens of first-rate Orchids. The *Dendrobium* is a lovely species, with racemes of creamy white and lemon-yellow flowers. The variety of *Cattleya superba* is indeed lovely—much richer than ordinary, and the variety of *Vanda tricolor* remarkable both for large size and rich colour.—ED.

Hardy Orchids.—What a majestic appearance the Madeira Orchis (*O. foliosa*) has when grown alongside our native kinds and in good loamy peat and a partially sheltered situation. Here it has attained a height of about 3 feet, and seems yearly on the increase. The Lawson Seed and Nursery Company, of Edinburgh, who grow this Orchid in immense quantities, have used it with good effect in decorating their outdoor portion of ground at the Forestry Exhibition. Amongst our native kinds the pyramidal Orchis (*O. pyramidalis*) is in fine form at present, as is also *O. maculata*, *Habenaria bifolia*, *Herminium Monorchis*, and *Liparis Loeseli*, the two latter kinds increasing from year to year. Of foreign kinds the various forms of *Serapias* are all that could be desired, and at present there is in flower *S. neglecta*, *S. cordigera*, and the curious *S. lingua*. Some of these, notably *S. neglecta*, have been established for a couple of years in their present position, and appear as strong as when imported from Italy. Another interesting foreigner now in full bloom is *O. globosa*, which, from its deep colour, ease of growth, and lasting qualities, should be allotted a shady corner in gardens where hardy plants are grown.—A. D. WEBSTER, *Llan-degas, Bangor*.

Deformed *Odontoglossum*.—Mr. Crawshaw, of Rosefield, Sevenoaks, sends us a deformed flower of *O. crispum*. The flower has the normal number of sepals, but two distinct lips, with the rudiments of a third attached to the lowermost sepal. A normal flower occurred on the same spike.

SEASONABLE WORK.

FLOWER GARDEN.

GENERAL WORK.—The height of the flower-garden season, every branch of it, having now been reached, it will be well to make note of the best arrangements, in order that, if thought desirable, they may be repeated another year; also to note errors of arrangements and kinds of plants that have failed to give satisfaction, that the one may be rectified, and the other excluded next season. Perfection of keeping, both as to turf beds, walks, and all the surroundings, should now be the one great aim, for however perfect the arrangements and flowers may be, weeds, decaying flowers, and long Grass will mar their effects. Our own routine at this season is something like the following: Beginning with shrubbery, clumps, Rhododendrons and Azaleas are freed from seed-pods, suckers are pulled off, straggling shoots cut in, weeds destroyed, and verges cut fortnightly; fernery and rock garden weeding, cutting in shrubs that encroach on walks or over the Ferns, cutting off old flower-stems on rockwork, clearing rusty fronds off Ferns, and weeding out any of the common kinds to give room to the best varieties. The common Bracken we find very troublesome, owing to the soil having been brought from land where it grows naturally, every particle of root with a joint soon making a large plant. Sub-tropical beds are looked over weekly, in order to keep the plants well up to their supports, and for the present the flowers are kept picked off Castor-oils, Cannas, Tobaccos, and any of the plants that we wish to grow large rather than flower. The under-growths are either pegged down or are kept dwarf, and spreading by repeated stopping, according as may be needed, by the kinds of plants used. When no such under-growth plants are employed, the beds are kept mulched either with leaf-soil or decayed manure. On the parterre there is always much to be done by way of trimming of formal bedding arrangements. *Mentha*, *Mesembryanthemums*, *Herniaria*, *Sedums*, and *Saxifragas* require to be clipped or pressed down at least once a week; *Verbenas*, *Petunias*, and the like to be pegged down; and part of the flowers should be picked off *Calceolarias* and all the seeding flowers of *Violas*; they are also kept mulched with rotten manure, and under such treatment never wane, either as regards vigour or flower, in the driest season. Roses are gone over once a week for the purpose of cutting off bad flowers and shortening long shoots. Climbers are twisted or tied to their supports, and those on walls syringed to keep them free from insects. Mowing and clipping turf verges and clipping Box edgings, *Privet*, *Laurel*, and *Yew* hedges complete the round of flower garden labour at the present time.

INDOOR PLANTS.

PELARGONIUMS.—Such of the large-flowered varieties of these as were stood out in the open air after flowering and have sufficiently matured their shoots should be headed back; but though it is desirable to get this operation completed without delay, as upon its being early carried out depends the time when they will bloom next year, still heading down should never be attempted until the bases of the shoots have attained a woody condition and are quite hard. If the plants are already as large as it is desirable to have them, all the shoots should be cut down to within two or three eyes of where they were shortened to last year, letting the earth in the pots get quite dry before they are cut in; if this is not done many of the roots will perish. After cutting down they should be put in a cold pit or frame, and kept moderately close to induce them to break; no water should be given them until they have broken, but a slight moistening overhead every afternoon will be an advantage. Should it be desirable to increase the stock of any kind, cuttings ought to be put in. Many who have the management of private gardens are now beginning to appreciate the merits of the deco-

orative kinds; their profuse flowering disposition and compact habit make them most useful, and if well managed they make pretty blooming plants in one year from the time the cuttings are struck.

FUCHSIAS.—In the pot culture of *Fuchsias* the system often followed of keeping old plants on for a number of years is quite a mistake, as they usually get bare and naked at the bottom, and are deficient in the fresh vigorous character which young stocks possess. If small specimens of the freest blooming kinds are grown, pretty plants can be had by midsummer; but where really fine examples are required either for exhibition or for home decoration to bloom from July to the end of September, there is no method by which they can be had equal to that of striking cuttings about the end of July, and keeping them growing slowly in an intermediate temperature through the winter; treated so, they can be had from 4 feet to 5 feet high and 3 feet through, furnished with shoots bearing a profusion of flowers and healthy foliage that will all but hide the pots. For this system of cultivation cuttings should at once be put in, selecting shoots for the purpose that are free as regards growth and not producing flower-buds, as if the latter are used they will strike slowly and make slow progress afterwards. Where large examples are wanted early in the season old plants will answer best; when these have been flowering for a considerable time they will begin to get exhausted. Where such is the case they may be turned out-of-doors to harden a little for a fortnight, and then have their shoots shortened in to about half their length, placing them in a close house or pit, syringing well, and as soon as they begin to push growth freely keeping them regularly supplied with weak manure water; managed in this way they will again start away and flower until late in the autumn. A matter of importance in *Fuchsia* growing is to keep them freely syringed regularly two or three times a week, being careful to get the water well to the undersides of the leaves, without which they are all but certain to become infested with red spider; freedom from this pest, accompanied with the seed-pods being picked off as soon as formed, is the only means of keeping these plants flowering freely the length of time they are capable of.

CELOSIA PYRAMIDALIS.—At no season is this elegant plant of more use than when late, so as to be in flower up to the end of the year. If small stock newly vegetated are not already at hand, a pinch of seed should at once be put in; the plants resulting from this last sowing will, if well cared for, yet succeed, and come in either for cutting or intermixing with other things. Where a sufficient stock of this *Celosia* is grown they help to brighten up a conservatory or greenhouse better than most plants, their erect form of growth relieving the even surface which bushy specimens present. They are sometimes affected with red spider, but this pest can easily be avoided if the syringe is sufficiently used.

HYDRANGEAS.—The panicle-flowered variety of *Hydrangea* is one of the best subjects for forcing or bringing on slowly in a cool house we have, being very superior to the old variety. Where it has been so used, now, when the blooming is over, the plants ought to be turned out of the pots in good soil in an open, sunny place, have their strongest shoots well shortened back, and if the weather becomes dry, be well supplied with water; so treated, after another season's growth they will be ready for again using in pots. Plants of the ordinary kind that have been used for pot work should be similarly turned out of the pots, have the old bloom-shoots cut out, and the young growth usually existent at the base of forced stock encouraged, so that it may be in a condition to flower next season, which many of these forced plants will do if well cared for, although in their case it will be well not to attempt forcing, simply letting them come on in a cold house or pit, when they will be found very serviceable to follow the early-flowered examples. Young stock of this species struck from cuttings in the spring should be moved to the pots in which they

are intended to be forced, and plunged out-of-doors in the full sun, well attended to with water so as to ensure stout growth and get it well matured, on which their ability to produce fine heads of bloom next spring depends.

CHRYSANTHEMUMS.—Easy as these beautiful autumn-flowering plants are to manage, the press of other work in the busy summer season often is the cause of their being so little attended to that a fine head of bloom is out of the question. The stronger and more vigorous the plants are the more sustenance they will require in the shape of watering. Now that the pots should be getting fairly full of roots they are best plunged in ashes, as then the temperature of the roots is more equable, and they are less likely to suffer through want of water. If the best display obtainable for a long period is required, a few of the earliest blooming sorts should also be cultivated. These will very soon be showing their bloom buds, and will bear weak manure water using altogether.

DESTRUCTION OF RED SPIDER.—This diminutive insect is one of the most troublesome pests that gardeners have to contend with, as it cannot be destroyed by fumigation like aphides. Its presence is invariably followed by much worse consequences to the leaves of the plants it gets established on than with aphides. Many people are deterred from attempting the growth of such subjects as it is especially partial to, which necessarily limits the variety present in greenhouses and conservatories during the summer months when it is most prevalent. Yet this is a mistake, as where sufficient means are taken from the spring onwards to prevent its ever getting a lodgment, there is no danger of any plant being injured through it. All that is necessary is a daily and sufficient use of the syringe with clean water, not simply sprinkling the upper sides of the leaves in the way too generally deemed sufficient, but which, in most cases, is wholly useless so far as keeping down the pest which instinct teaches, both for protection and food, to keep on most plants almost entirely to the undersides of the leaves; consequent upon this no amount of water that only reaches the upper surface can affect it. This is one of those small matters in gardening that are so obvious to everyone who has any knowledge of insect life, so far as it affects plants, that it would seem all but unnecessary to mention it were it not that little observation is needed to see that for want of getting enough water continuously through the growing season to the parts where the spider takes up its quarters, unlimited numbers of plants suffer in a way that makes them more an eyesore than an ornament.

ORCHIDS.

EAST INDIA HOUSE.—There will not be such a wealth of bloom in this house now as there was a few weeks ago. The temperature of our house has been kept about 5° lower and the atmosphere rather drier than usual to prolong the bloom as long as possible. Now we will keep a rather moister atmosphere and will take advantage of fine weather to shut up earlier in the afternoon in order to keep up a higher temperature by sun-heat, although it is not possible to do so altogether without artificial heat, the weather during the last week or so having been abnormally cold. Many are giving their Orchids a greater amount of sunlight than has been usual heretofore, but of all the sections of Orchids, those grown in the East India house are the most likely to suffer from too much exposure to the sun, and it would be better to shade too much at this season than to risk scalding the leaves, a misfortune which cannot easily be repaired. Pay particular attention to *Angraecums*, and see that they do not become infested with thrips; if they are, dip the leaves or wash the pest off with soapy water. We have alluded on previous occasions to the shy-flowering *Grammatophyllum Ellisi*, a striking Orchid, exhibited some time ago by Messrs. Low. All their plants had been grown in a warm house, potted in shallow pans or baskets, and suspended close to the

glass. Their experience is that this species requires to be kept very dry after growth has been completed. When the next growth is being formed the flower-spikes come up with it. *Cypripediums* requiring the temperature of this house may now, if necessary, be repotted. Most of them do best in the usual potting material, that is, peat and Sphagnum, but some like turfy loam to pot into. The pretty *C. niveum* is one of these, and one would take it for granted that *C. Spicerianum* would also do in loam, as imported plants seem to have been collected off a bed of moist loam. *C. Stonei*, superbians, *Lowi*, and hybrids from these may now be potted in peat and Sphagnum, using plenty of drainage, and also charcoal and crocks amongst the compost. In hot weather these and other *Cypripediums* may be syringed overhead.

CATTLEYA HOUSE.—Attend to watering the plants in this house and to keeping them clean. "How often do you water your Cattleyas?" it may be asked. To this question it is not possible to give a direct answer. Some plants may want water once a week or in two weeks; others may require it almost every day. Small plants suspended near the glass require it very often. Large specimens on the stage do not need water oftener than perhaps once in a week or ten days; all depends on whether the plants are resting or making growth, and whether the pots are well filled with roots or not. It will thus be seen that no definite instructions can be given as to the quantity of water which the plants ought to have or how often it ought to be applied. The earliest *Dendrobiums*, such as *D. Wardianum*, have now made their growth; it will be necessary to remove them to a cooler, drier, and more airy house. If this is not done when growth is completed they will start again. The largest proportion of our plants have been removed to a warmer house, as we find that such species as *D. Dalhousianum*, *D. thyrsiflorum*, and *D. suavisimum* take all the season to make up their growths, and they have not time to complete them unless they are pushed along very rapidly during the growing period. *Vandas*, such as *V. suavis*, *V. tricolor*, and similar species, certainly do best in the Cattleya house temperature. They are now pushing out fresh roots from the stem above the Sphagnum. The best way is not to interfere with them, but to see that no slugs or other depredators get near them. Most of the plants in this house are now making growth, and require a moister and rather warmer atmosphere than hitherto to aid them to do so. They also ought to have as much light as possible without allowing the sun to shine directly upon them. The temperature of the house may be about 65° at night, and it can be kept up to this with very little artificial heat indeed.

COOL HOUSE.—We are not much troubled with thrips in this house at any season, but if they do appear it is generally during the summer months. The plants should be frequently examined in order that they may be destroyed on their first appearance. We noticed traces of them on some plants of *Odontoglossum cirrhosum*, but they have been washed with Tobacco water, and in case the pest had spread further the rest of the plants were also dipped or washed. Green fly is likewise rather troublesome, but that is much more conspicuous and more easily destroyed than thrips. We usually dip the plants for it, or if on the flowers, it is brushed off. If it is necessary to do any potting, let it be done without disturbing the plants more than may be necessary. If it should be thought essential to shake all the compost from the roots, as it sometimes is, we would rather delay the potting of such plants until later, or, what is better, leave it until January or February. We have shaken the roots free from all potting material at that time without injuring the plants in the least, but have seen them suffer a little when this has been done in summer. The usual occupants of the cool Orchid house do not like the excessive heat of the summer months, and if growth is checked at that time, they may be seriously crippled, and some of them may even die. We keep the temperature as cool as possible by day, and leave the ventilators partly open at night.

FRUIT.

PINES.—Plants intended for starting early next year will now be rooting freely in the pots they are to occupy until the fruit is ripe. As the principal point in the management of this batch is the early maturity of stout plants in medium sized pots, give gentle stimulants at each watering to help them on, and syringe lightly overhead after closing for the day. The general stock of plants now swelling off fruit will require good feeding with diluted liquid and plenty of atmospheric moisture whenever the house can be closed at the maximum of 85° to 90° with sun heat; the surface of the bed and the axils of the lower leaves may also be kept moist by having a little clear liquid applied with the syringe at nightfall. Remove all fruit to a dry, warm place to ripen up as soon as it begins to change colour, otherwise *Queers* will soon go black in the pip and the fruit will not keep. Renovate the beds in succession pits and give the plants more room as they increase in size. Keep them well fed, damp all available spaces after closing, and economise fire heat when the weather again becomes favourable to forcing without it. Remove suckers from old stools, trim and pot them at once, and plunge in a strong bottom heat of 90°. Use the soil in a rough, dry state, make it very firm, and give a gentle watering, unless the plunging material is heavily charged with moisture, when watering may be deferred for a week or two. Keep them close and moist by dewing them over with the syringe on fine afternoons, and shade from bright sun when we are again favoured with a change to sunny weather. If any of the spring suckers have not been shifted, lose no time in getting them into larger pots as they become ready. At one time the potting of Pines was a biennial operation, but now growers who have to maintain a steady supply of fruit find it best to shift a Pine, like any other plant, when the pot it occupies is full of roots and fresh food is absolutely necessary to its progress.

VINES.—Muscats now beginning to take their last swelling should have their internal roots well mulched with half-rotten stable manure, the ammonia from which will be found inimical to red spider, while its stimulating properties will benefit the foliage and draw many of the active surface roots to the influence of warmth and air, so essential to the perfect finish of this valuable Grape. Keep a sharp look-out for scalding in the *Lady Downes* house should the weather continue as unsettled as it has been of late, and counteract its injurious effect by maintaining a night temperature of 70° with a little top air and by ventilating freely through the day. To insure the ripening of this and all the best kinds of winter Grapes by the middle of October, the above figures should be continued as the minimum, with a corresponding rise through the day, and if these cannot be secured from solar heat alone, steady firing, while it increases the size of the berries, will be found more economical now than sharp forcing with double the amount of fuel in the autumn, when the Grapes should be sufficiently advanced to require cool treatment, and the Vines will derive great benefit from comparative rest.

Houses in which ripe Grapes are hanging will require just enough gentle fire heat to prevent condensation of moisture on the berries, and in the event of their being wanted to keep for any length of time, two or three folds of fishing-net thrown over the roof will break the direct rays of the sun, as black Grapes soon lose their colour and freshness at this season. It may also be necessary to protect outside borders from extremes of heat and drenching rains by adding more non-conducting material, or by drawing tarpaulings over them until all the Grapes are cut. It is not, however, a good plan to allow Grapes to hang longer than is absolutely necessary, as late hanging is almost as great a tax to the Vines as early forcing; but where heavy crops have to be kept, the cutting of the last bunch should be followed by liberal supplies of diluted liquid to the inside borders, and good syringing to keep the foliage clean and healthy. Encourage newly-planted Vines to make

rapid growth by closing early with plenty of solar heat and moisture. Keep the laterals pinched to one or two buds, stop the leaders when they have filled two-thirds of the trellis, and then allow an unrestricted growth up to the end of the season. Discontinue the use of stimulants when pot Vines begin to ripen up their wood, but do not let the roots feel the want of water. Syringe regularly to keep the foliage fresh and free from insects, ventilate through the early part of the day, and close early in the afternoon with plenty of dry sun-heat.

FIGS.—Maintain a steady circulation of dry, warm air in succession houses in which Figs are now ripening, and expose the fruit to the full influence of sun and light by cutting away all useless growths. Add fresh mulching as the roots find their way to the surface, and keep it constantly moist by the liberal application of warm liquid or guano water. Gather the fruit when it is quite ripe for home use, and before it attains that state if intended for market. When the fruit crop has been taken from the trees in the second house, take out all the wood that can be spared, apply clean water to the foliage twice every day, and shut up with strong sun-heat. Young trees in pots and tubs will require constant pinching to keep them in proper form. Clean, straight, single stems look and answer best, as there is no trouble with suckers, and the pyramidal form of training exposes the greatest number of Figs to the sun. Look well to the trees in cold houses and wall cases, as they will do good service long before ripe fruit can be gathered from open walls. Lay in no more wood than is actually necessary, pinch the points out of gross shoots, mulch, feed, and syringe well, and shut up in time for the sun to raise the temperature to 80° on fine afternoons. Pot trees intended for forcing should now be fit for removal to a warm, airy house where they can thoroughly ripen up their wood. Syringe the foliage to keep it clean, withhold stimulants, and drop the pots into others a size larger to protect the roots from drought, or cover them up with spent tan, leaves, or litter.

HARDY FRUITS.—Peaches, Nectarines, and Apricots which have not been nailed in must have immediate attention. Fortunately, with the exception perhaps of Plums, crops generally are fairly good, and this circumstance will have a favourable influence in keeping the growths of the current year within bounds, while a fine autumn may ripen up the wood. Before nailing is commenced, stop all laterals and sub-laterals, and pinch the points out of growths which are likely to become too strong, and carefully guard against overcrowding by laying in a single shoot that will have to be cut away in the winter. If mulching has been neglected, the use of strong stimulating manure which does a great deal of good in hot seasons may be dispensed with, particularly in cold districts, and a covering of fresh stable litter or old time rubble, an excellent covering for stone fruit trees borders, substituted with advantage to the trees and comfort to those who have to work upon the borders in wet weather. Follow up the removal of breastwood from Plums and Pears on walls and espaliers, commencing at the top and working downwards, and lay in no more wood than is wanted, as the spurs and buds will require all the warmth and light that can be secured to them. Net Morello Cherries to protect the fruit from birds, but first of all see that the tips of the shoots are free from black aphid, and, if necessary, repeat the dipping in Tobacco water. Prune and net Currants, but do not cut the young growths too short, as a moderate quantity of foliage protects the fruit from sun and rain, and favours its keeping well into the winter. Strawberries, a heavy crop, have been injured by wet, particularly where the plants have not been well trussed to keep the fruit quite clear of the ground. Vicomtesse Héricart de Thury and the good old Elton are two of the best for preserving purposes. Paxton resists wet better than President. Oxonian, Loxford Seedling, and Frogmore Late Pine, now coming in, are at the head of the list of late varieties. We plant Oxo-

nian extensively on north borders, and find it the most valuable and profitable crop we can grow. When the gathering is over for the season, beds that are to be retained may be dressed out and well mulched with rotten manure or fresh loam, which is equally valuable in old gardens. Follow up preparations for new beds, and get them planted before the young plants become pot-bound. If Cherries or Currants occupy a wall, a fishing net supported on slanting laths running from the top of the coping to the margin of the walk protects the two crops, and the fruit is accessible at all times.

KITCHEN GARDEN.

THE so-called varieties of Cabbage are legion; amongst the best, Heartwell takes a prominent place, being large in size and good in quality. Enfield Market is also remarkably good. The first sowing should be made about this time in shallow drills, covering the seeds with burnt refuse; should the land be dry, water the drills without a rose on your watering-pot. Lettuces and Endive may be sown at the same time. We always sow small seeds at this season in land which has been broken with the cultivator rather than having it dug up. The land for Tripoli Onions can hardly be too rich; about the first week in next month is the right time to sow them. Many growers sow in drills, and transplant either in autumn or early in spring, but the best bulbs we ever grew were sown in 4-foot beds and duly thinned, leaving only the best plants. The land should be heavily manured and deeply dug, breaking the soil as the work proceeds; afterwards tread it firmly, rake it, and then proceed to lay out the beds. Wherever there is room plant with the crowbar any kind of good Broccoli; everything in this way is always useful when frost visits us. Stir the ground among all growing crops with the cultivator, letting in the air and killing the weeds at the same time. We plant Coleworts 12 inches apart. The site is that just cleared of Myatt's Potatoes and well broken up with cultivators; then drills are drawn and well watered, the only preparation the land requires; no digging or manuring is done; in fact, if kitchen gardening is to be made easy, one must step out of the beaten track and find others more in accordance with the times in which we live.

FRUIT GARDEN.

APPLE CULTURE.

THE instructions usually given on this, as on many other cultural subjects, are often of far too special a character to suit the circumstances and situations of growers. The first thing to be realised is, that scarcely anywhere in the British Islands does the Apple refuse to thrive on the natural stock, which after all must carry the trees that are to bear our future main crops, as it has done in the past. What can be done by growing Apples from cuttings has yet to be proved; but as a large raiser of young trees pointed out to us lately, Apple trees from cuttings cannot—at least in all cases, if in many—be depended upon like those which are grafted, and as grafting forms the readiest way of propagating young trees, he failed to see the advantage of cuttings. The Crab stock raised from seed can be procured with facility, and as soon as an Apple shoot or two is grafted upon it it is a tree ready for planting, and soon is in bearing.

SOIL.—Although, as has been said, the Apple grows anywhere, all soils are not alike suitable to it; but almost any ordinarily healthy soil can be rendered suitable. The constituents of the wood and fruit of the Apple are found to consist in very large proportions of lime, potash, soda, and, in much less proportion, of phosphoric acid, silica, peroxide of iron, and magnesia, the last four being usually found in sufficient quantity in ordinary soil, so that the elements to be made up in soils not already sufficiently charged with them are lime, potash, and soda, all of which can be readily procured and applied in some form or other. The percentage of potash in the Apple fruit is about

35 per cent., of soda 26; and in the leaves and wood the proportion of potash is 19, and lime 63. Marly or calcareous soils are, therefore, best for the Apple, and soils not naturally of that character should have lime and marl added to them. A natural loam answers best generally, but old garden soils may be rendered suitable by the application of lime in considerable quantity, and potash and soda may be added in the form of wood ashes, either dug in or sprinkled frequently on the surface of the borders. For mostly all fruit crops wood ashes are of great value, and hence the ashes of rubbish heaps, dead branches, burnt soil, &c., should always be collected and used when such manures are needed. Probably there would be fewer Apple failures if it were not for the roots of the trees getting out of the good soil prepared for them and going down into the subsoil, which, whether hard or soft, it is not desirable they should enter. If rocky, poor, or dry and bad, the consequences will probably be canker, blight, and other evils; and, if soft and moist, late and ill-ripened wood, which is never productive. In removing some old and healthy trees here once, I found they had all been originally planted in as good a way as any that could be devised to give the roots a lateral direction and keep them out of the subsoil, which is bad, except where the expense of concreting or flagging the border is gone to. Under each tree has been placed a broad flag, about 2½ feet from the surface, and all round this projected smaller flags, arranged like the slates on the roof of a house, the central flag forming the crown. The roots, of course, were compelled to spread out, and could not penetrate the subsoil till they had reached the outermost edge of the stones, by which time they were disposed to keep the lateral positions, being sub-divided, small, and spreading. In cold and late districts, infinite trouble and disappointment would be prevented if the roots of fruit trees could only be confined to the surface soil prepared for them, for in that case they would not grow over luxuriantly, would need little or no root pruning, and would not become unhealthy.

THE MOST FAVOURABLE SITUATION that I can conceive for an Apple or Pear tree in a cool climate is one in which the roots could not penetrate deeper than 18 inches from the surface, with nothing but suitable soil above that for the roots to run in. The late Mr. Charles McIntosh and his brother James both practised the plan of planting their Apple trees on raised mounds, on the surface of the soil, the roots being little more than covered. The writer was familiar with many examples so planted on a heavy soil in Dumfriesshire, where the climate is cool and dripping, and they did wonderfully well so long as the trees were young; but as soon as they got their roots down deep, then troubles began, the growths becoming rank, and crops more precarious in consequence. Practically, then, what any cultivator has to do to secure crops of Apples or Pears, whether he resides in the north or south, is first to ascertain whether his soil is a naturally suitable one or not, and if not, to make it so by the simple means described above; and next, to take whatever means he finds readiest and most efficient to confine the roots to the soil allowed them, and so keep them under control. Market growers cannot be expected to incur much expense in forming fruit-tree borders; but in private gardens, where a few good trees would provide a supply, the same objections do not exist. Suitable sorts for the climate and locality come next. Apples and Pears of certain kinds are produced from the Land's End to John o Groats, and even in the Shetland Islands, but only certain sorts. We can suggest no better plan to the intending planter than to apply at the nearest respectable nursery where fruit trees are kept in stock, or at any large garden, where he will surely learn what varieties do best, and these he should plant for crops till his own experience teaches him how he may extend his collection.

PRUNING.—By common consent as well as necessity, it is now acknowledged that the best and most productive form of tree is the common standard, with the round natural top for orchards, and the natural bush form for dwarfs. Neither require

much, if any, pruning if the roots are rightly managed and kept in check, and absolutely no training. I am of course speaking of orchard and standard trees generally. It is of the utmost consequence that the labour of culture should be reduced in the case of the market grower to add to his profits, and, in the case of the private grower, to make it worth his while to grow his own fruit; for he can always buy better than he can grow, and cheaper as well, we fear. We have long been familiar with the culture of the Apple and Pear in the best private gardens, and taking into consideration the actual wants of an establishment, and the time, &c., spent on the trees, we are sure the crops did not pay. Probably, however, the quantity of fruit trees in gardens might be reduced by one half if better and more reliable sorts were selected, and fewer of them, thus reducing the labour of culture and increasing the crop at the same time. I am certain, for example, it would pay anyone better to plant two trees of Lord Suffield or Warner's King than it would half a dozen of other and less certain varieties for the same reason; and the same may be said of all the really good Apples, whether of general or local repute. Plant few varieties, plant those that bear surely, and plant large sized sorts. As might be expected, the different varieties of Apple vary greatly in size, the largest attaining a diameter of nearly 6 inches, while the smaller kinds are hardly larger than Crabs. Some of the small kinds are of excellent quality, though not better than the good sized sorts, and there is now a tendency to discard small kinds, at least in culture for profit, as the fair sized fruit is preferred by the dealer and fetches the best price. Good sized fruit is also preferred for dessert purposes. Indeed, it would be no great loss if nearly the whole of the small Apples were expunged from the list, as they virtually are already by those who are now engaged in planting orchards.

PLANTING.—Now is the time to prepare soil and materials for planting in autumn, which should not be delayed long after the leaves have fallen; and it may be done before that, provided the wood is hardened. All manures and other materials should be brought to the place, and the ground should be trenched regularly over from 2 feet to 3 feet deep, the lesser depth in late and cold localities, and the greater in those that are warmer and drier. In trenching, the common practice of simply turning the ground upside down, and burying the manure in the bottom of the trench, should be avoided, and, instead thereof, the soil, lime, ashes, and manure should be turned over, so as to mix all thoroughly from top to bottom, levelling the surface of the subsoil as the work proceeds. If flags are used to place below the roots, as suggested, they may be laid on the subsoil at the same time where the trees are to stand. What are called Yorkshire greystone slates, or strong blue slate, are cheapest and best. They should be laid flat, even, and close, overlapping, as we have said, from the centre or crown; and if it is convenient to bed them roughly in lime, all the better. This is an excellent and simple plan where the subsoil is bad, as it effectually prevents subsoil-rooting, if care is taken to pack each slate solid beneath with earth, so as not to let the whole weight rest on the lap, in which case the slate may crack through the weight of the superincumbent earth. The refuse of stone quarries will answer well enough, and these may be got for the loading, or little more, in some places.

J. S. W.

PROTECTION, OR NO PROTECTION.

WHEN "J. S. W." first stated his opinion on this subject (Vol. XXV. p. 511), he said Peach bloom will not endure more than 2° or 3° of frost; in his latest communication (p. 54) he says it will perish with from 4° to 6°. Will he kindly tell us how such contradictions can be made to agree? "J. S. W." asks if I can controvert the figures he there gives. I have not said anything about the number of degrees that will or will not kill Peach bloom or that of any other kind of fruit, knowing from observations made with thermometers hung

on the walls in different localities over a series of years that any statement of the exact number of degrees of cold which the bloom will bear is not to be relied on. On a night when the atmosphere is heavy with moisture, and the bloom consequently damp, less frost will destroy it than when the air and the flowers are dry. At p. 512, Vol. XXV., "J. S. W." says that a given amount of frost will kill Peach bloom, let the previous treatment of the trees have been what it may. At p. 54 he admits that poor weak bloom will succumb to less frost than where the wood has been well ripened. This is what I have always maintained; but how "J. S. W." can reconcile his opposite statements is hard to understand. The comparative hardness of Gooseberry bloom, which "J. S. W." introduced into the subject, is irrelevant, and proves nothing one way or the other as regards the matter in question. The exact amount of frost which the bloom of Peaches or other outdoor fruits will bear cannot be determined. As I have said, it varies according to the amount of moisture in the atmosphere and the direction and force of the wind. Any definite statement would therefore not be reliable, nor can what takes place one season be taken as a reflex of others, past or future. Even in the present spring in many places the Peach bloom escaped, whilst that of other fruits was killed. On a long trellis-covered walk filled with Fears I have had a full even crop in a season when there were 7° of frost on two nights when the trees were in full bloom. In another spring, after a damp, sunless summer when the buds were not ripened, most of it was cut off by a like amount, thus showing the difference of ability between well and badly ripened buds to withstand frost. The same rule hold good with Peaches, to which fruit the present discussion more particularly relates. The amount of cold which the bloom will bear depends, as I have shown, on conditions that are scarcely ever in any two seasons exactly alike; on this account "J. S. W.'s" figures, expressing the exact amount of frost which he says will kill the bloom, are valueless. Beyond this their introduction had no bearing in any way on the present discussion, which arose out of some remarks I made in reference to a fine crop of outdoor Peaches on an unprotected wall in a garden at Roehampton, where this spring, as in numbers of other places in that neighbourhood, there were registered 13° or 14° of frost. What I stated is correct, in proof of which the trees are there to be seen. Can "J. S. W." explain how the crop escaped there and in other places, where this season Peaches are the only wall fruits not killed except Apricots, which were set before the frost came?

T. BAINES.

Mulching Strawberries.—It is to be regretted that excellent crops of Strawberries should often be completely spoiled through not providing some clean material to keep the fruit off the ground. Stable litter, if put round the plants soon enough so that it may get thoroughly cleansed by rain, is a capital makeshift when nothing better can be got. This year we cut a quantity of long coarse Grass out of a plantation, and used it green; it answered admirably. In future we shall not use anything else when it can be obtained, but should we fail to get a sufficient quantity, we shall certainly try the cut straw recommended by "J. C. C." (p. 54). We were puzzled to account for the fact that although we have plenty of slugs in other parts of the garden, we have not been troubled with them on the Strawberry beds, the very place where they have been most plentiful in other years. After reading "J. C. C.'s" excellent notes on this subject, we examined the coarse Grass on the beds, and found that it was very sharp and anything but pleasant for slugs to travel over. We tried short Grass from the mowing machine, but did not like it; it stuck to the fruit when ripe, and was almost, if not quite, as bad as grit. Oak bark (from the tan-yard is a capital thing with which to mulch Strawberries when it can be got, but, unfortunately, it is not every gardener who can get it.—R. MCINTOSH, *Grimby*.

SOCIETIES.

ROYAL HORTICULTURAL.

JULY 22.

THE exhibition which took place at South Kensington on this occasion was by far the largest and finest that has been held in the Royal Horticultural Gardens this year. The periodical fruit and vegetable show, held under the auspices of the Health Exhibition committee, was an excellent one, the exhibits being more extensive and finer than on previous occasions. This, combined with the usual fortnightly meeting of the committees and the annual show of the Carnation and Picotee Society, quite filled the large conservatory. The exhibits placed before the floral committee were not numerous, but consisted chiefly of new and rare plants, and an unusual number of certificates was awarded. First-class certificates were awarded to

ODONTOGLOSSUM VEXILLARIUM SUPERBUM.—This was the most remarkable plant shown, as it is probably the finest variety of *Odontoglossum vexillarium* that has ever been flowered in this country. The flowers are noteworthy chiefly for their colour, their size not being above the average. The whole flower is of a deep rose-pink, while in the centre is a large blotch of the deepest maroon crimson. It is this central blotch that makes the flower so particularly striking. Exhibited by Mr. B. S. Williams, Upper Holloway.

CATLEYA GASKELLIANA.—The new species or variety recently introduced by Messrs. Sander. The flowers seem to be midway between C. Warneri and C. Mossiae, some forms resembling the former, others the latter, while some again are more like C. Trianae. It was shown on this occasion both by the introducers, Messrs. Sander, of St. Albans, and Mr. Crawshaw, Rosefield, Sevenoaks. Both plants shown represented lovely varieties, that from St. Albans being much the darkest, almost as dark as a Warneri. Mr. Crawshaw's variety was remarkable for the broad and beautifully coloured lip and the wide-spreading sepals. This *Catleya* is undoubtedly an acquisition.

BEGONIA RUHM VON ERFURT.—A double flowered variety of the tuberous-rooted race, remarkable for its sturdy dwarf habit of growth, its extreme floriferousness, and the brilliancy of the flowers, which are of vivid scarlet. It stands out conspicuously even among the multitudes of tuberous Begonias now in cultivation. Shown by Messrs. Cannell, Swanley.

ROSE MADAME EUGENE VERDIER.—A Teascent variety of great merit, possessing all the good qualities of its parent, the popular Gloire de Dijon. The flowers are extremely beautiful in the half expanded state, the shape very perfect, and the substance good. The colour is a rich yellow, inclining to apricot in the centre. It has every promise of becoming a popular Rose. Shown by Messrs. Paul & Son, Cheshunt.

PELARGONIUM MADAME THIBAUT.—One of the Ivy-leaved race with large trusses of very double flowers of a glowing carmine-rose. It is considered to be one of the finest of this section yet raised. Shown by Mr. W. Bealby, Roehampton.

LATHYRUS LATIFOLIUS DELICATUS.—A lovely variety of the Everlasting Pea, the colour of the flowers being a delicate pink, shaded here and there with white, and exquisitely pencilled with deep pink veins. This is a valuable addition to hardy perennial flowers. Shown by Mr. R. Dean, Ranelagh Road, Ealing.

ROSA LUCIDA ROSE BUTTON.—A most charming little Rose, quite distinct from any other, it being a double-flowered variety, of a species but seldom seen in gardens. The flowers are small and very double, and are best comparable in size and form with those of *Azalea roseaeflora* or *A. Rollisoni*, as it is otherwise called. The colour is a deep rose inclining to purple. It is extremely floriferous. The large display of blooms exhibited by Messrs. Veitch was the admiration of everyone.

RHODODENDRON EMPRESS.—A superb new seedling variety of the Javanese race and distinct

from all others, inasmuch as the flowers, which are large and finely shaped, possess a ring of pale pink or almost white, the rest of the colour being a salmon-pink inclining to orange. Exhibited by the raisers, Messrs. Veitch, Royal Exotic Nursery, Chelsea.

CAMPANULA TURBINATA PELVIFORMIS.—A new variety, in which the flowers are almost flat instead of being cup shaped. The colour is a pale lavender, very soft and pleasing. The plant appears to be a sturdy grower and a free flowerer. Shown by Messrs. Paul and Son, Cheshunt.

AERIDES HOULLETTIANUM.—A handsome species, and until recently one that has been extremely rare. It belongs to the same section of the genus as the well-known *A. crispum*, the flowers of the two species being very similar in form. The colour, however, of *A. Houlettianum* is most distinct. The sepals and petals are of a soft fawn colour, while the labellum is a deep rose-magenta. The spike is long and pendulous, and deliciously fragrant. Exhibited by Mr. B. S. Williams.

GLADIOLUS HYBRIDUS LAFAYETTE.—A very fine variety of the new race of hybrid Gladioli, obtained by intercrossing *G. purpureo-auratus* with varieties of the *gandavensis* race. The flowers are larger than those of any raised previously, but are similar in form to those figured in THE GARDEN, Vol. XVII., p. 306. The upper sepals are fawn colour, the lower three being blotched with crimson. Shown by Messrs. Veitch.

DENDROBIUM GRIFFITHIANUM.—A handsome species, best described as having the flowers of *D. chrysotoxum*, with the habit of growth of *D. Farmeri*. The bulbs are quadrangular, and the spikes are nearly a foot in length, drooping gracefully from the top of the bulb. The rich yellow of the flowers renders the plant very striking when in bloom. A fine specimen of it was exhibited by Messrs. Sander & Co. under the name of *D. Guibertianum*, which appears to be a synonym.

SPIRÆA BULLATA.—A new species of diminutive growth, the whole plant being under a foot high. The stems are slender and crested, furnished with small, wrinkled leaves, and terminated by flat clusters of deep carmine flowers, the unexpanded buds being crimson. It is a pretty little shrub, and interesting as being among the smallest of the genus. Exhibited by Messrs. Paul & Son, Cheshunt.

PRUNUS PISSARDI.—A variety of *P. cerasifera*, having the foliage of a deep purple-red. If a good grower and perfectly hardy, it will prove a valuable addition to hardy ornamental deciduous trees. Shown by Messrs. Veitch.

PRIMULA RUSBYI.—A pretty and interesting species said to be from North America. The plant shown by Mr. R. Dean, of Ealing, had only been received by him three weeks ago from America, therefore was not fully developed. The leaves are long and serrated, the flowers like those of *P. farinosa*, but twice their size. The colour is a rich mauve-purple, with yellow in the centre of the bloom.

CLEMATIS COCCINEA.—Of this remarkable species there were shown some uncommonly fine flowering sprays cut from plants in the open air. The flowers were not only twice the size of those usually seen, but the colour was very much brighter, being of a vivid crimson-red. Possibly Messrs. Veitch's plant may represent a finer variety, though good culture may account for the difference.

There were a few other plants of interest submitted to the floral committee. Besides the plants certificated, Messrs. Veitch showed a fine group of their seedling greenhouse *Rhododendrons* of the Javanese type. These comprised the best of the named sorts, as well as some seedlings of great promise. The best shown were Duke of Edinburgh, Prince Leopold, Maiden's Blush, Princess Frederici, Princess Alexandra, and Taylori—all of the highest merit; other indoor plants included the showy *Clianthus Dampieri*, with its singular lobster-claw-like flowers. From their Coombe Wood Nursery Messrs. Veitch showed flowers of some varieties of hardy *Ceanothuses*,

among them being *Gloire de Versailles*, *Arnoldi*, and *albidus*—three of the very best sorts. *Styrax japonica*, with white, bell-shaped flowers, was shown; also *Andromeda japonica* and *Daphnephyllum glaucescens*, a handsome-leaved Japanese shrub, presumably a hardy evergreen. A large gathering of *Iris Kämpferi*, from another outdoor nursery of Messrs. Veitch's, showed the splendour and variety of colouring that exists in this species alone.

Mr. Jacob Makoy, of Liege, sent *Croton inimitabile*, a handsome variety, with long and broad leaves brightly mottled with carmine, yellow, and green; also *Pavetta montana*, with large clusters of white flowers, and *Anthericum latifolium albo pictum*, apparently the same plant now so common in the London nurseries.

Mr. Philbrick, of Oldfield, Bickley, showed a plant of the rare *Oncidium aërochardium*, a yellow flowered species, not very showy, and the New Plant and Bulb Company showed *O. prestans*, a handsome and attractive species, with a large lip of clear yellow and with banded sepals. The same firm also sent out spikes of *Montbretia crocosmæflora*, the new handsome hybrid between *M. Pottsi* and *Tritonia aurea*.

Messrs. Carter exhibited the white *Rhodanthe Manglesi*, a good addition to half-hardy annual plants, and useful for cutting for winter; also a new dwarf *Nasturtium* with crimson and yellow flowers called *Beauty of the Border*. The new *Invincible Carmine Pea* was shown admirably by Messrs. Laing, the flowers being brighter in colour than we had hitherto seen it. Some pretty seedling *Carnations* were shown by Mr. Mundy, of Basingstoke, and an excellent yellow variety named *Pride of Rochester* came from Mr. Bridges, of Penshurst, who raised it.

Messrs. Laing took the opportunity of the present occasion to display their magnificent collection of tuberous *Begonias*, both single and double. A long line of fine specimens of these stretched along one half of the conservatory, making a brilliant show and winning many admirers. Seldom has there been seen such a display of *Begonias* at an exhibition.

HARDY FLOWERS were again shown admirably by Mr. Ware, of Tottenham, and an interesting collection in pots likewise came from Messrs. Paul, of Cheshunt. Among Messrs. Paul's plants were some beautiful panfuls of *Campanulas*, chiefly of the *turbinata* race, there being the pure white, the mauve, and the deep purple varieties, as well as the type. Other *Campanulas* included the rarely seen *C. alpina* (true), *C. linifolia alba*, and *C. Tenori*. A good pot specimen, well flowered, of *Omphalodes Luciliæ* was shown; also the variegated form of *Euphorbia amygdaloides* and a golden variegated form of *Herniaria glabra*, a low trailing perennial.

Mr. Ware's collection was as usual a large and most attractive one, consisting, as it did, of the cream of hardy flowers now in perfection in his nursery. The most remarkable flowers were the *Lilies*, which are just now in the height of their flowering season. The North American species, *L. pardalinum* and varieties, were particularly beautiful, as they grow so strongly at Tottenham. It would make a long list to mention the names of all the noteworthy plants shown by Mr. Ware, as the group contained, we imagine, the bulk of the midsummer hardy perennials that are worthy of cultivation. Besides these there was a large display of border *Carnations* in great variety, these being one of the principal classes of plants grown in the Hale Farm Nursery.

FRUIT AND VEGETABLE SHOW.

As we before remarked, this was a large and excellent show, the quality of the exhibits being higher than on any previous occasion this season. There was a good competition throughout, and but very few classes were unrepresented. The schedule provided for a comprehensive show so as to make it interesting to all classes. The chief features in the fruit classes were the fine examples of smooth-leaved *Cayenne Pines*, notably those in

the class for four fruits, the aggregate weight of which was 33 lbs., and likewise the pair of fruits of the same kind in another class, which weighed 17 lbs. From the same exhibitor was also sent a dozen fruits, all of uniform excellence, and to which an extra prize was deservedly awarded. These productions were from the gardens of Earl Fortescue, Castle Hill, South Molton, Devon, and were a credit to the gardener, Mr. Nicholas.

In the Grape classes, the most prominent exhibits were the *Madresfield Court Black Muscats* from Mr. Roberts, of Gunnersbury Park gardens, Acton. These were grand examples of first class culture, fine bunches, enormous berries, and well finished, and no symptoms of cracking were to be seen. In the *Black Hamburg* class, Mr. Taverner, gardener to Sir A. K. Macdonald, Bart., Woolmer Lodge, Liphook, repeated his previous achievement of winning with ease. His productions were perfect examples of this Grape and splendidly finished. In the vegetable classes some first-class productions were exhibited, especially in that for the collections in which Mr. Haines, gardener to Earl Radnor, Coleshill House, Highworth, this time came to the front with eight strong dishes. In the classes for Peas and in the special prize classes Mr. Marriott, of Skirbeck, Boston, Lincolnshire, was simply invincible, winning five first prizes.

Taking the classes *seriatim*, we first come to that for collection of fruit (Grapes and Pine-apples excluded). In this class there were four exhibits, the first prize being awarded to Mr. Long's gardener at Rood Aston Park, Trowbridge, for sixteen dishes of general excellence throughout, all the fruit ripe and fit for the table. Pine-apple and Downton Nectarines were both in good condition, a fine scarlet Premier Melon, Blue Gall and Early Purple Plums, both good for the season and very fine. Mr. Goldsmith's second collection from Hollenden, Tonbridge, included some very fine fruit, and, on the whole, the collection was of more taking appearance than the first prize collection, the colour being better in several cases; his best dishes were Negro Largo Figs, Moor Park Apricots, two good dishes of Nectarines well coloured, and one good Melon. The third prize collection sent by Mr. Lee's gardener, Hartwell House, Aylesbury, contained fine dishes of Lord Napier and Humboldt Nectarines, with Hero of Lockinge Melon. Among four exhibits in the class for four Pine-apples the best, as already noted, came from Mr. Nicholas, Castle Hill Gardens, South Molton, the second from Mrs. Vivian's garden, Singleton, Swansea. In the class for two Pine-apples, four exhibits were again shown, Mr. Nicholas being first with his smooth Cayennes. In the class for two dishes of Strawberries four collections were shown; the first from Mr. Edmonds, Bestwood Gardens, Notts, with very fine Duke of Edinburgh and Sir Joseph Paxton; the second from Brodsworth Hall, Doncaster, consisting of Oxonian and Duke of Edinburgh, the latter to all appearance a fine late kind. In the class specially devoted to the Old Hautbois Strawberry no meritorious exhibit was produced. Among twelve single dishes Mr. Goldsmith was first with Sir Joseph Paxton. For Raspberries there were six collections of two kinds each shown, the best coming from Mr. Walker, of Thame. Nine collections of Gooseberries, no limit in numbers of kinds, were shown, the finest being from Mr. Nelson's gardener, Hanger Hill House, Ealing, who had twenty-seven dishes of fine fruits, ripe and well coloured. The next best from Mr. Walker contained thirty dishes, but were scarcely so fine in quality as the first. Mr. Goldsmith showed twenty dishes for the third prize. The finest six dishes of Gooseberries came from Mr. H. A. Brasseys's garden, Preston Hall, Maidstone; the second from Mr. Chadwick; the sorts Golden Lion, Chorister, Beaumont's Smiling Beauty, Cossack, Conquering Hero, and Crown Bob were among the best in each case.

There were seventeen couples of Melons staged, the first being from Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, for a

pair of *Scarlet Invincible*, being splendid fruits of this new Melon, which gained a first-class certificate in 1883 from the fruit committee. The second prize was taken by a pair of green-flesh fruits from Mr. R. H. C. Neville's gardener at Wellington, Grantham. This was a good class throughout, large fruits finding no favour with the judges, whose decision on this occasion was by tasting. In the class for the best two dishes of Peaches (*Bellegarde* and *Royal Kensington*) were from Mr. Coleman, Eastnor Castle gardens, both being up to his usual high standard of excellence. The next best were fine *Barringtons* and rather smaller *Stirling Castle* from Mr. Robins; eight other collections were shown. Among single dishes of Nectarines Mr. Roberts showed the finest, consisting of admirable fruits of Lord Napier, large and highly coloured. There were no fewer than fifteen exhibitors in this class.

There was a fair competition in the Grape classes. The *Black Hamburg* class brought out seven competitors, Mr. Taverner's bunches being far ahead of the rest. The class for bunches of the Duke of Buccleuch variety brought out three collections only, the first prize being awarded to Mr. C. A. Daw, Homefield, Ealing. These three bunches were well finished, clear in the skin, uniform in berry, but small in bunch. Mr. Robert's second best bunches were rather larger. The *Muscats* of *Alexandria* were for the most part unripe; all the six collections shown bore evidence of wanting a few more weeks to finish them to perfection. Mr. Edmonds, of Bestwood, was first with fine bunches that were fairly well coloured for the season. The class for *Madresfield Court Black Muscats* was only represented by two collections. It is surprising that this fine Grape is not more generally cultivated, both of the collections shown being enough to recommend it to the most fastidious. Mr. Roberts first prize bunches were the embodiment of perfection, and Mr. Heath, Northfield House gardens, Henley-on-Thames, showed some good bunches for the second prize. In the class for Grapes of any other variety there were five competitors. *Black Alicante* in splendid condition and well finished were first. These were from Mr. Wm. Tidy, Stanmore Hall. It is a pity, however, to see this fine autumn Grape, and a keeper, too, brought out so early in the season when Grapes of much better flavour can be easily had. Foster's Seedling, well coloured, and the same kind with unusually fine bunches, came from Mr. Herrin, Chalfont Park Gardens, and Mr. Roberts respectively. For a single dish of Cherries Mr. Coleman was first with *Bigarreau Napoleon*, fine fruits, well coloured, the second, from Mr. Miles, being apparently the *Florence Cherry*; eight other dishes were shown. The class for Currants brought forth a good competition, and some unusually fine lots were put up, very clean and bright in colour. The best among fourteen collections came from Mr. Robins, the second being awarded to Mr. Ross, of Welford Park gardens, with scarcely inferior fruit.

THE VEGETABLE CLASSES were well filled, and the productions bore evidence of good culture, notwithstanding the long period of drought. The best collection of eight kinds was shown by Mr. Haines. He had very fine Nantes Horn Carrots, good Trophy Tomatoes, Ashleaf Kidney Potatoes, and Autumn Giant Cauliflower, both of good quality, and a fine dish of Telegraph Peas, which we consider a better exhibition kind than Telephone by reason of its deeper green pods. Mr. Miles was second with an excellent collection, in which Italian Tripoli Onions were fine, and Culverwell's Giant Marrow Pea in good condition, the third prize falling to the lot of Mr. Ward, gardener to the Earl of Radnor, at Longford Castle, Salisbury, in whose collection Tender and True Cucumber and Canadian Wonder French Beans were conspicuous. Seven other collections were shown, most of which possessed considerable merit. In the class for six dishes of Peas, Mr. Marriott was first, two of the best kinds being Telegraph and Evolution, the other four being also of the large-podded type. In the special

prize class for Peas wherein prizes were offered by Messrs. Carter & Co. for their introductions, Mr. Marriott was again the winner with an extra fine collection, the stipulated kinds being Stratagem, Telephone, Pride of the Market (Carter's), and Telegraph (Culverwell's). In the special prize class for Mr. J. House's prize for House's Perfect Marrow Pea, Mr. Marriott was again first, and likewise for Messrs. Webb & Sons' prizes for the Wordsley Wonder Pea, a variety with neat compact pods, and again first in the special prize class for Mr. Thomas Laxton's new Pea Evolution, a promising new kind. In the Potato class there were fourteen lots shown of three dishes each, Mr. Meade, gardener to Viscount Barrington, at Beckett Park, being awarded the first prize for three clean and uniform dishes of Welford Park and Woodstock Kidney and Henderson's Prolific, after the School-master type—a good class throughout. Mushrooms in five dishes were shown, Mr. Hudson, of Gunnersbury House gardens, Acton, being first with very fine samples. Among eighteen dishes of French Beans, those from the gardens of Mr. W. H. Long were first, the kind being Canadian Wonder. Of thirteen dishes of Tomatoes, fine fruits of Vick's Criterion from Mr. Edwards, Liphook, Hants, were deservedly first, nearly every other dish being of extra good quality. Fourteen entries for smooth Cucumbers brought forth some better samples than usual. Tender and True, from Mr. Gilmour, gardener to Rt. Hon. G. J. Goschen, Seacox Heath, Hawkhurst, being first, whilst in the class for prickly samples Mr. Woodham, of the Model Farm gardens, North Dulwich, won easily with Pearson's Long Gun, a well-known old kind, but on this occasion being shown with rather long handles. Special prizes for Broad Bean John Harrison brought eight dishes, the best being one from Mr. Miles with well-filled pods.

Scientific committee.—Sir J. D. Hooker in the chair.

Vine Coccus.—Mr. Pascoe exhibited some specimens from vineries in Jersey, together with two parasites upon them, a chalcis and an unknown species. The coccus produced a large web. The species was not known.

Sarracenia flava.—Mr. G. F. Wilson showed a fine specimen of this plant grown in the open by a pond's edge. He said that *Dionaea muscipula* grew at the same place and had stood three winters. He also showed a species of *Lysimachia*, which always comes up in North American peat in which *Cypripedium* are imported. It was referred to Kew for name. He also exhibited *Begonia diversifolia* from Mexico. It had pink flowers and innumerable bulbils like the Himalayan species, by which it was propagated.

***Orchis pyramidalis* var. *cylindrica*.**—Mr. Ridley reported that this was the name of the species exhibited by Mr. Loder at the last meeting. It is a native of Greece and Dalmatia. One flower was remarkable for having two labella.

Fasciated *Agapanthus*.—Mr. Murray said that he had observed a number of plants at Calais remarkable for being all fasciated, the flowers being normal. Mr. Wilson observed that he had known a case of *L. speciosum* being constantly fasciated.

Large foliage.—Mr. Bennett exhibited leaves of *Aristolochia Sipho*, remarkable for the size of the leaves. Sir Joseph Hooker observed that the fineness of the foliage of the trees at Kew was very remarkable, notwithstanding the dryness of the atmosphere in the early part of the present summer.

***Antigonon leptopus*.**—Mr. Lynch exhibited sprays of blossoms illustrating the climbing properties of the peduncles and pedicels of this plant, resembling the Vine and Virginian Creeper in this respect, their tendrils being homologues of flowering branches.

Embryo buds of Cedar.—He also exhibited several of these top-shaped structures, not uncommon in the Cedar of Lebanon.

Proliferous spelt Wheat.—Mr. Maciachlan said that he had seen a quantity of spelt in this condi-

tion on the Continent, resembling the so-called Egyptian Wheat, a variety of Revetts.

***P. Nordmanniana* attacked by aphids.**—Mr. Maciachlan also reported on some branches sent to the last meeting by a horticulturist whose trees are nearly ruined. They were infested by a species of *Lachnus*; the only remedy to be suggested was to syringe with a fire engine with some antiseptic fluid, as the trees were over 20 feet high.

Potato fungus.—Mr. Plowright sent specimens of Potato which had been artificially impregnated with spores, but protected on a portion of the stem about 5 inches from the base with cotton wool, so that no spores could attack them there. A quantity of spore-charged water was poured upon the foliage and upon the surface of the earth in the pot. In four days (July 9) the fungus developed itself on the foliage and stem above the cotton wool. It gradually extended itself until the leaves and stem were entirely destroyed, excepting the parts protected. Four tubers were found, one diseased and three healthy. The diseased tuber remained attached to the stem; the diseased parts of it were farthest away from its attachment, so that in this instance the disease was believed by the experimenter not to be transmitted to it by the stem. Mr. Murray raised the question whether this conclusion was justified, as the tuber had not been cut open. The specimens were therefore referred to the sub-committee appointed to carry out experiments at Chiswick for further examination and report.

Mushrooms replaced by other fungi.—Mr. B. Fitter, of Thirlmere, Edgbaston, forwarded to the secretary some fungi which had made their appearance on Mushroom spawn. They were transmitted to Mr. W. G. Smith for examination and report, who replied as follows: "The fungus on the Mushroom bed is *Agaricus cristatus*. It has an offensive smell. This *Agaricus* is capable of ousting the Mushrooms from beds. *A. fastibilis* and *A. dealbatus* do the same, so does *Xylaria vaporaria*. The bedding material so exactly suits the mycelium of these fungi, that if the spores once light on a bed, the resulting fungi are easily able to oust the rightful possessor."

Rhubarb stalks dried.—The secretary reported that the sample sent by Mrs. Jones, of Bedford, was made into a preserve, but proved a failure. The stalks consisted of little else than woody fibre and were uneatable, while the syrup partook of a poor flavour of Rhubarb, the chief value of the stalks having been already expressed.

***Clematis Proteus*.**—This variety is remarkable for bearing double flowers in July, but a month later it throws up only single flowers. The double flowers were exhibited on a former occasion. Mr. Noble now sent single flowers from the same plant. It is of a pale lavender colour.

***Syrax japonica*.**—A little known species was exhibited by Mr. Veitch with flowers not unlike the common *Syringa* (Philadelphus). It was figured in Siebold's *Flor. Jap.*, tab. 23.

Black Currant, pale-fruited var.—Mr. Plowright sent a branch of this variety for information as to its origin. It was referred to Mr. Barron.

Diseased Pear trees.—Specimens of branches attacked by some disease were received from Mr. F. Forster, of Daventry, who observes of it: "When the tree is first struck in a fresh place the bark gradually thickens and looks thick and full of sap, then small cracks appear, then a brown spot, and the place finally cankers away." It was referred to Mr. Murray for examination and report.

***Primula Rusbyi* (!)**—A plant with small lilac flowers was sent by Mr. R. Dean, of Ealing, received from North America. It received a first-class certificate, and was forwarded to Kew to ascertain the correct name.

***Begonia*.**—A very rich coloured *Begonia* King of Kings was sent with blossoms of *Pelargonium* Henri Jacoby for comparison as regards colour by Mr. Cannell.

Teratology.—The Rev. G. Henslow exhibited several specimens illustrative of metamorphoses in flowers. *Double purple and white Hyacinths*.

—In these the difference appeared to be that in the former the petals are multiplied indefinitely, and are then continued into a small green mass of minute leaves in the centre, while in the white the transformation is not so complete, open carpels being found in the centre. *Petaloid carpels in *Hesperis matronalis*.*—On dissecting the flowers of the plant brought by Mr. Loder to the last meeting Mr. Henslow found some transitional states well shown of carpels partly foliaceous and green and bearing ovules, the other part being petaloid. *Monstrous *Begonia*.*—Several modifications of the flowers of *Begonia*, e.g., antheriferous styles, absence of ovaries, petaloid styles, superior ovaries, ovuliferous petals, or such metamorphoses being peculiarly characteristic of *Begonia*s. *Fuchsias* with petaloid anthers and with foliaceous sepals. —The petaloid variety of anthers is called "scaramouche." Virescent petals in *Rhododendrons*, received from Mr. Veitch. Strawberry with virescent carpels, a feature characteristic of the alpine Strawberry. Foliaceous bracts in a *Heracleum*, Ivy, Aster, and multiplication of spathe in the white variety of *Anthurium Scherzerianum*. *Anemone* with petaloid bracts to the involucre, and another specimen with a second flower in the axil of a bract of the involucre.

Hybrid *Digitalis*.—The secretary also reported on some hybrids between *Digitalis lutea* and *D. purpurea*. In both cases, as in the present received from Mr. A. Dean, the former was the female parent. The figure of the corolla given by Prof. Henslow is of a darker purple than any of Mr. Dean's, though he reports that earlier blossoms were of that character. There is some variability in the size of the flowers, some being scarcely larger than normal flowers of *D. lutea* (less than 1 inch), others reaching 1½ inches, but none attaining to the average length of *D. purpurea*—2 inches to 2½ inches. The purple spots characteristic of *D. purpurea* are sparsely scattered or wanting; hence, the spikes of flowers much more resembled *D. lutea* than *D. purpurea*.

***Antirrhinum majus* (monstrous).**—He also reported on specimens sent to the last meeting by Mr. Cannell. There was some slight difference in the structure of the two kinds, though both had a very similar double appearance. In one with a yellow colour prevailing the posterior petal was normal, with a purple apex, but the four usual stamens had petaloid anthers, the latter reproducing the orange lips characteristic of the corolla. The filaments were adherent to the corolla. The posterior or fifth stamen was present and similarly constructed; this was accompanied by two additional and narrower filamentous processes, but without anthers, one being on either side of the posterior stamen. The carpels of the ovary were separate, the apex of one being sometimes petaloid. In place of the axile placenta was a petaloid structure apparently made of abortive stamens, sometimes free, with variously formed yellow appendages in place of anthers, and sometimes joined together. This contained a second similar, but more rudimentary, structure within it, and which was succeeded by a third. The purple form was not very dissimilar, having only the filaments free from the corolla, the anther lobes being ovate in form, orange below, and dark purple above. The ovary, as in the previous case, was open, and a corolla protruded from the interior. The limb of the latter was approximately regular, with orange papillae round the margin. This contained petaloid structures, apparently representing abortive stamens.

CARNATION AND PICOTEE SHOW.

ON Tuesday last the members of the southern section of the National Carnation and Picotee Society held their annual exhibition in the conservatory at South Kensington, a circumstance which added largely to the interest and attractiveness of the exhibition of the Royal Horticultural Society. The show was in every respect excellent, all the blooms being of high quality. The various classes were all well represented, though it was apparent that the prizes were chiefly taken by about three

exhibitors. Mr. Turner was never in better form, as may be inferred from the fact that he took the first prize in every class in which he exhibited. The other principal prize-winners were Mr. Douglas and Mr. Dodwell, both well-known Carnation growers. There seemed to be a few new names among the exhibitors in the minor classes, but these are still far too few compared with the large number of Carnation growers even about London. The fact that the prizes are annually taken by those who hold very large stocks no doubt deters many cultivators of small collections from exhibiting.

CARNATIONS.—The chief class for two dozen blooms was represented by only five collections, a large number having regard to the fact that it requires a very large collection to cut two dozen blooms of the highest quality in about as many varieties. Mr. Turner showed a superb collection of blooms for the first prize, every flower being simply perfection. We give the names of the sorts shown, as they include a representative selection of the finest exhibition sorts. Duplicate sorts were allowed in this class; therefore there were not two dozen distinct sorts: Tim Bobbin, Wm. Skirving, Jessica, Florence Nightingale, Matador, Squire Penson, John Keat, Sir G. Wolseley, Robert Lord, Mayor of Nottingham, Mrs. Bridgewater, Mrs. Barton, Sybil, Jas. Douglas, Squire Llewelyn, Rob Roy, Master Fred, and A. Medhurst. The other exhibitors in this class were Messrs. Douglas, Dodwell, Hooper, and Hines, who were placed in the order named. The best among seven collections of a dozen blooms came from Mr. Douglas, who had fine examples of the following sorts: E. S. Dodwell, Florence Nightingale, George, Miss Helen Lodge, W. Skirving, Rob Roy, John Bayley, Miss Henderson, J. Douglas, W. M. Hewitt. Of the eight collections of six blooms the best was that from Mr. Rowan, of Clapham—a noteworthy fact, seeing that this exhibitor grows such fine blooms in the midst of a populous neighbourhood. The sorts Mr. Rowan selected were Mars, Falconbridge, Master Fred, Miss Erskine Wemyss, George, Florence Nightingale.

SINGLE SPECIMENS.—There were five prizes offered for the best blooms of scarlet bizarres; also for crimson bizarres, pink bizarres, purple flakes, scarlet flakes, and rose flakes. There were no fewer than three dozen blooms of scarlet bizarres. Among these the sorts Robert Lord was first, Master Stanley second, Robert Lord third, James Macintosh fourth, and a seedling fifth.

Among thirty blooms of crimson bizarres, a fine seedling was first, A. D. Southgate second, J. Moore third, seedling fourth, E. S. Dodwell fifth. Some two dozen pink bizarres were shown. W. Skirving was first, Squire Llewelyn second, W. Skirving third and fourth, Squire Llewelyn fifth.

Among a score purple flakes, Florence Nightingale was first, second, and third, Squire Whitbourne fourth, Florence Nightingale fifth. Scarlet flakes numbered about two dozen. The first prize was taken by a seedling, Matador second and third, a seedling fourth, and Matador fifth. Out of two dozen rose flakes the best was Jessica; Mrs. Bridgewater was second, Jessica third, Rob Roy fourth, Jessica fifth.

PICOTEES.—Among five collections of two dozen blooms the finest was from Mr. Turner, whose sorts were J. B. Bryant, Mrs. Rayner, Dr. Epps, Juliette, Louisa, Mr. Tutton, Maude, Ethel, Mrs. Webb, Muriel, Lucy, Her Majesty, Mrs. Payne, Jessie, Orlando, Zerlina, and Duchess. The next class for amateurs only was represented by six collections, that from Mr. Douglas being the finest. He had Mrs. Bower, Mrs. Payne, Ethel, Constance Heron, Her Majesty, Prince of Wales, Jessie, Zerlina, Miss Lee, Clara Penson, Estelle, and Mrs. Chancellor, all admirable blooms. The best half-a-dozen blooms among nine collections were from Mr. Anstiss from his Buckinghamshire garden. His sorts were Sillington's Favourite, Mrs. Dodwell, Mrs. Payne, Her Majesty, Royal Visit, and Mrs. Chancellor.

SINGLE SPECIMENS.—These were not so numerously shown as the Carnations. In the class for red heavy-edged varieties, the sort J. B. Bryant took the first three prizes, Brunette fourth, and Princess of Wales fifth. Among the blooms of red light-edged sorts, the best was Mrs. Bower, which also took the second prize, Mrs. Gorton was third and fourth, and Violet Douglas fifth. About a dozen purple-edged sorts were shown, Muriel taking all the fine prizes, which fact says a good deal for the high quality of this variety. Among eighteen rose or scarlet light-edged sorts, Her Majesty took first and second, Nymph third, Clara Penson fourth, Her Majesty fifth. A number of rose or scarlet heavy-edged sorts were shown; Mrs. Payne was first, Royal Visit second, seedling third, Mrs. Payne fourth and fifth.

A score or more of rose or scarlet light-edged sorts were shown. Sillington's Favourite was first, Ethel second, Evelyn third, Sillington's Favourite fourth, and Empress Eugénie fifth. The yellow ground varieties made a large class, there being some two dozen blooms of these. Ne Plus Ultra was first, Janira second, Ne Plus Ultra third and fourth, and Mrs. Cavell fifth.

The miscellaneous classes for selfs, fancies, and yellow ground varieties were represented much more numerously than usual. Even of stands of two dozen blooms there were four collections. The best of these was from Mr. Turner, who had a capital selection, all first-rate sorts. Among them were the following: Mary Morris, W. P. Milner, Flirt, Lady Cathcart, Reverse, Mrs. Bridgewater, Edith, The Governor, Elegant, Sir G. Wolseley, Virgo, E. S. Dodwell, Jessica, J. Tomes, Lady Stamford, Matador, Unexpected, and Florence Nightingale. Mr. E. S. Dodwell showed the best dozen blooms in the class for fancies, &c.; the sorts were Florence, Ruby May, Mrs. Channess, Miss Erskine Wemyss, Dean Wood, and Dot, besides several new seedlings. The finest collection of a dozen blooms of yellow ground sorts was from Mr. Turner, who had Prince of Orange, Doré, Mrs. Cavell, Janira, Starlight, Lady Lascelles, Eleanor, and Mazzini.

The pot plants were better shown this year than hitherto, the plants being seemingly better developed, and the flowers were shown to better advantage, inasmuch as the paper collars to the flowers have at last been set aside. There were but two collections, Mr. Taylor and Mr. Douglas being the exhibitors. The collections of Carnations and Picotees not for competition made quite an exhibition in themselves. For instance, Messrs. Veitch exhibited eight boxfuls representing over 300 blooms of Carnations and Picotees all of high quality, notwithstanding the fact that they were grown in their nursery in the King's Road, Chelsea. Messrs. Veitch also showed about a dozen new varieties, some of which were certificated. Mr. Smythe, the raiser of the beautiful and now popular Mary Morris Carnation, made a fine display of this variety, and showed it to perfection. One bowl contained no fewer than 160 blooms, which made quite a glow of colour. Messrs. Cross & Steer showed their new sorts, The Governor and Louisa Ashburton, both destined to become among the most popular of sweet-scented Carnations; the first is a delicate blush, the latter pure white and exquisitely frilled. Messrs. Wood & Ingram, of Huntingdon, sent three new Picotees, named Queen Adelaide, Dora, and Hon. Mrs. Duverley, all first-rate sorts, the latter being particularly fine, with light purple edge. A large group of Carnations of all sections was contributed by Messrs. Paul & Son, Cheshunt.

VEITCH MEMORIAL PRIZE.—On this occasion the trustees of the Veitch Memorial prize fund offered the medal and a prize of £5 for the best dozen blooms of Carnations and six blooms of Picotees. The competition was confined to amateurs and gardeners. There was but one competitor; this was Mr. Douglas, who had a superb collection of the following sorts—Carnations: James Douglas, T. S. Ware, Jessica, W. Skirving, Rob Roy, Squire Whitbourne, H. Cannell, Miss Gorton,

Admiral Curzon, Florence Nightingale, and James Crossland. Picotees: Brunette, Her Majesty, Zerlina, Constance Heron, Mrs. Payne, and Mrs. Gorton.

The premier Picotee in the show was found in Mr. Turner's collections, a very fine flower of Muriel. The finest Carnation was on Mr. Dodwell's stands, the sort being Master Fred.

First-class certificates were awarded to Messrs. Veitch for border Carnations Harvester, Mrs. Glen, Celia, John Burnet, and to Rose Perfection Pink.

The list of awards appears in our advertisement columns.

LATE NOTES.

Rose (Anon).—It is impossible from mere buds to name your Rose. They were, too, quite withered when we received them.

Pansy blooms (T. J.)—Pretty mulberry coloured semi-double selfs, but single Pansies, in our opinion, are handsomer than double ones.

Seedling Dahlia (F. A. B.)—A very good variety indeed—quite equal to the best named sorts. No doubt it will come even better later in the season.

Double Begonias (G. H. Mousdon).—A fine selection of varieties, representing, we imagine, some of the best sorts in cultivation. If you had named or numbered the blooms, we could then have said which we considered the best.

Seedling Raspberry (J. Smith).—It is very difficult to judge the merits of a Raspberry by cut fruiting twigs alone. Your seedling requires to be grown side by side with the finest sorts already in cultivation in order to test its distinctiveness.

Watering plants (S. I.)—We do not think that water containing nitrate, iodide, and bromide of silver, sulphate and oxalate of iron and potash, and soda in various forms would be useful to plants, but you might try its effects on some valueless plant by way of experiment.

Primroses from seed.—It is important that the seed of Primroses be sown the moment it is ripe. I know of but few seeds that so quickly lose their vitality, and this is the reason why bought seed generally disappoints; whereas self-sown plants are almost always to be found where old stools have bloomed at all freely.—J. C. B.

Books received.—We have received the following handbooks published under the auspices of the International Health Exhibition by Clowes & Son, Charing Cross—viz, "Healthy Nurseries and Bedrooms," by Mrs. Gladstone; "Alcoholic Drinks," by Dr. J. L. W. Thudicum; "Accidental Injuries: their Relief and Immediate Treatment," by James Cantlie; "Diet in Relation to Health and Work," by Dr. A. Wynter-Blyth; "Healthy and Unhealthy Houses," by W. Eassie, C.E.; "Healthy Furniture and Decoration," by R. W. Edis, Architect; "Dress and its Relation to Health and Climate," by E. W. Godwin; "Infectious Disease and its Prevention," by Shirley F. Murphy; "Health in the Workshop," by J. B. Lakeman; "Ventilation, Warming, and Lighting," by Capt. Douglas Galton; "Athletics" (part I.), by Rev. E. Warre; "Days and Hours in a Garden" (2nd edition); Elliot Stock, Paternoster Row; "Greenhouse Management for Amateurs," Bazaar Office, 170, Strand; "Modern Window Gardening," by S. Wood. Houlston & Sons, Paternoster Square.

Names of plants.—J. H. Valence.—Appears to be a Cymbidium; send us a flower.—Mrs. M. A.—*Calyptegia oculata*—A. Elder.—1, *Crinum pedunculatum*; 2, *Asclepias curassavica*—E. A. K.—*Lysimachia ciliatum*.—L. T. Davis.—Plant not received.—Tahiti.—Pink flower appears to be *Chrysanthemum alpinum*, please send better specimen; *Salvia Horminum* (purple bracts); bulbous plant flower had quite withered, it is probably *Crinum pedunculatum*.—R. W.—1 is *Coleus* Mrs. George Simpson; cannot name the other.—G. T. D. P.—1, *Deutzia crenata* fl.-pl.; 2, *Polygonum cuspidatum*; 3, one of the numerous double varieties of *Potentilla*; 4, *Potentilla colorata* G. Bolas.—We regret not being able to assist you in naming the Roses; you will understand how difficult it is to name Roses without means of comparison; send them to some rosarian.—Constant Reader.—1, *Viburnum Opulus* (Guelder Rose); 2, *Tamarix gallica*; 3, *Spiraea Nobiliana*; 4, *Lycostera formosa*. Our rule is to name but four plants at one time; you send thirteen.—Max.—*Bieracium aurantiacum*; *Gallega officinalis*; *Antennaria margaritacea*—Brazil.—1, *Cattleya crispa*; 2, *C. Forbesi*; 3, *C. crispa*, a rather better variety than No. 1.—H. D. E.—1, *Saccolabium Blumei*; 2, cannot name; 3, apparently *Cattleya Harrisonia*, but cannot be certain without seeing flowers; 4, *Oncidium flexuosum*.—J. Baylis.—Your *Cattleya* appears to be *C. Sanderiana*, a free-flowering form of *C. gigas*.—Anon.—Cannot name the Rose; *Campanula* sent are the double purple and double white varieties of *C. persicifolia*.—A. Elder.—1, *Umbilicus Semenovi*; 2, *Sedum hybridum*; 3, *Potentilla bifurca* (rare); 4, *P. recta*.—E. F. C.—Vetch is *Vicia sylvatica*; other is *Centaurea nigra*; 3, *Betonica officinalis*; 4, *Poterium Sanguisorba*.—R. Young.—1, *Cattleya Gaskelliana*; 2, *Chysis Limminghei*; 3, *Cattleya luteola*, a rarity; 4, *Dendrobium Pierardi*; 5, not sent; 6, *Masdevallia Chimera*.—J. Wood.—1, cannot name without flowers; it is probably *Silphium triternatum*; 2, *Hydrocotyle americana*; 3, appears to be *Cephalaria tatarica*.—K. A. S.—*Mazus Pumlilo*; *Sedum album*; *Achillea Ptarmica* fl.-pl.; *Lilium pardalinum*.

No. 663. SATURDAY, Aug. 2, 1884. Vol. XXVI.

"This is an Art
Which does men's Natures change it rather; but
THE ART ITSELF IS NATURE." *Shakespeare.*

A GOOSEBERRY HOUSE.

A FEW years ago it was decided to enclose, in a large garden near here, a number of Gooseberry bushes with a permanent framework covered with wire network. A long border against a high north wall was selected for the purpose, the wall, besides supporting the framework, being also covered principally with Gooseberry trees. This Gooseberry house was from the first a great success, and became one of the features of a generally well-managed garden. Nowhere else have I seen such exceptionally heavy crops of Gooseberries as there were here, and the position also favoured late keeping, so that the owner's table was better supplied with Gooseberries than is generally the case. As a consequence of this success all hereabouts who could afford it were inclined to similarly protect a number of bushes according to the extent of their gardens, but unfortunately the value of the invention, if I may so term it, was more apparent than real, as they soon found that the outlay on the protecting materials was by no means the only expense that would necessarily be incurred. This permanent protection of the buds first and of the fruit subsequently from birds proved to be also a sure method of preserving the Gooseberry caterpillars from harm—a circumstance quite overlooked, and as a consequence the bushes were partially spoilt before those in charge were aware of the danger. Where the bushes are covered in so as to be inaccessible to small birds they are certain to become badly infested with the caterpillar, and it is surprising how difficult it is to eradicate. Pounds may be spent upon Fir-tree oil and other well-known remedies during one season and the crops preserved, yet sufficient caterpillars will escape to stock the trees as badly as ever the following season. Much may be done by handpicking, but this must be resorted to early or at a time when there is perhaps already too much to do. Hot water, petroleum and water, sulphur, and various other remedies all may prove destructive to these voracious pests, and much good may also be done by mulching the ground about the bushes early in spring with spent bark fresh from the tanneries, or by making the ground extra firm about the bushes, while some have tried the experiment of removing the surface soil during the winter. All these precautions, whether adopted with the view of preventing as many caterpillars as possible from gaining winter quarters in the soil, the egress of the fly in spring, or the destruction of the chrysalids, are, I firmly believe, only partially effective, and without the assistance of birds soon rendered futile. Therefore if we find it necessary to protect first the buds and then the fruit from birds, we must uncover again from the time when the leaves appear till the fruit commences to ripen, and trust to birds to keep the bushes clean. At least, this is all that is necessary in our garden, and although we have fully half an acre planted with Gooseberry and Currant trees, caterpillars seldom make headway, except on the wall trees near a much fre-

quented path. Which amongst the birds are our greatest friends I am unable to say, but I have seen hedge sparrows, house sparrows, tomtits, and whitethroats very busy among the bushes, and believe that all these and other birds not generally insect-eaters will, during nesting-time when other food is scarce, destroy many kinds of maggots and insects. Being situated near a well-wooded neighbourhood, all kinds of native and migratory birds are among our visitors, friendly and otherwise, cuckoos being very numerous. It is a common notion that the latter exist principally on the eggs of other birds, but this is altogether erroneous, as probably no bird that visits us or wholly dwells with us eats a greater number of grubs or caterpillars. They are said to be great enemies to the Gooseberry caterpillar, but I have never seen them actually among the bushes. Another bird for which I have a great regard, but which the gamekeepers too often destroy, is the common sparrow-hawk. These birds, besides preying on field mice and small birds, also eat many grubs, and for days they have been clearing the Red Currant bushes trained to a north wall of caterpillars that infest them. Food must be either scarce or the caterpillars to their liking, as they venture to go where but few birds would in order to find them. In a town garden near here the protected bushes are almost denuded of leaves, those unprotected only being slightly attacked by caterpillars, but no large birds venture near, and sparrows and chaffinches are believed to be the enemies of the caterpillar in this case. Probably some of the readers of THE GARDEN may be in a position to offer a few instructive notes on this generally interesting subject.

Marston, Frome.

W. IGGULDEN.

RAILWAY EMBANKMENT GARDENS.

WHATEVER blessings we derive from our railways (and they are many), they certainly absorb something like 182 square miles, or 116,480 acres, of good land. There is always one and sometimes two sunny sides to railway embankments, and on these Strawberries enough to supply the whole country might be grown, besides such low-growing fruit trees as Gooseberries and Currants, whilst on the margins of cuttings, Cherries, Plums, Apples, and Pears might be advantageously cultivated. The waste land on the sides of the levels should be utilised for vegetables. How all this is to be profitably done is the difficulty. An infinitesimal portion of this scheme is now carried out at country stations and crossings. Nearly all railway men are gardeners, and all praise to them for the Roses and hardy flowers in which their huts and houses are frequently embowered. They get land near home from their employers at little or no rent, and on that the off-duty hours are spent. In a scheme for the conversion of railway banks into fruit gardens, directors and managers would have to be appealed to, and it would be necessary almost in the first instance to supplement each platelayer's gang of men by one who knew something about fruit-tree management—one who could utilise his time when not fully occupied by railway duty (as is now done by platelayers in hedging and ditching) in attending to the fruit trees. It is not generally known that just as our coast is perambulated every night by coastguardsmen, so the whole sixteen thousand miles which we have of railways, mostly consisting of double lines, are walked over each morning by platelayers.

One or two garden inspectors would be required on each railway on somewhat the same scale as telegraph inspectors now are; these would have to superintend the laying out of nurseries on such suitable lands as are to be found on every line, and to direct the transport of the trees to the places required to be planted. After such a plan as that here sketched had been fairly started the rest would be easy; replacements, pruning, and gathering the fruit would not be difficult. Fruit hampers might lie empty at the stations as meat hampers do now, and of never-to-be claimed returned empty packages there is no lack; these filled with fruit, a few basketfuls daily from each station, would soon so change the markets of our metropolis and large towns, that the poor could eat and have to spare. Food would be grown where now there is none; it would be grown on banks inclined to the sun at such an angle as to render the conditions equal to those in the south of Europe. Especially would this be the case if the planting was judicious, so as to secure shelter from cutting winds. Many objections to this scheme may be raised, but to all new schemes, whether good or bad, objections are offered. It may be said, for instance, that the smoke from passing locomotives would be adverse to successful culture; that sparks might fire the fruit bushes &c.; that thieves would clear off what remained of such fruit as the platelayers did not eat; and that the shifting character of many of our cuttings would be against the plan. These are amongst the principal objections which occur to me at the moment. The first and second I would dispose of by saying they do not hold good at present in the station-master's garden or the porter's plot; these are praiseworthy examples of good paying work. As to thieves, they would be as open there to capture as elsewhere, and away from towns the villager so disposed can grow his own, or if too idle can, as matters stand now, steal from his more industrious neighbours. The platelayer under the eyes of the gardener representative of his gang would have no more chance of getting fruit than he now has of stealing scrap iron under the eyes of his ganger. With regard to shifting ground, drainage and borings would be used then as now, and the garden inspector would only authorise the planting of suitable plots. The work should be begun in the middle of railway lines, and be gradually extended to the termini; by this means suitable markets would be reached with facility, and thus railway gardening economically and efficiently conducted might in time even have a favourable effect on the dividends.

Horsforth, near Leeds.

R. A. H. G.

Lord Suffield Apple.—This useful early Apple is this year in fine condition; in fact, as a first rate culinary fruit I think I may safely say that it is equalled by but few, and excelled by none. Its even outline marks it not only as one of the handsomest of Apples, but, what is of equal importance, there is no waste in paring it. I find that rough, deep-furrowed Apples, like deep-eyed Potatoes, soon get into disrepute when smooth-skinned specimens are procurable. Lord Suffield is just the Apple for dwarf bushes; its fruits are large and heavy, and, being delicate-skinned, they are soon damaged if blown off tall standards, while from dwarfs if they drop on the soft earth little damage is done, and in a general way they will be mostly used before the rough gales of autumn set in, for they are fit for use by the middle of July, and during August and September they are at their best. Those who contemplate

planting Apples in the autumn should make a note of this kind. Young bushes come into a fruitful state very early, and rarely fail to carry a crop of fine fruit. The only pruning needed is pinching out the points of the strongest shoots in July, and giving a very slight thinning and regulating in winter. — J. GROOM, *Gosport*.

FRUIT GARDEN.

STRAWBERRY SUPPORTS.

It is not in a season like this that the value of Strawberry supports can be so fully recognised as when the weather during the ripening period is rainy. In a wet time not only is the fruit when supported preserved against the attacks of vermin which then abound, but it also colours and ripens better. But propping up the berries on twigs, as has been suggested, often results in their being scorched when a very parching period of weather supervenes. This is more especially the case with respect to kinds which, being very firm when ripe, are naturally hard and seedy in the immature stage. Sir C. Napier is very susceptible to injury in this way, and I have known a good lot of fruit of it to be quite spoilt by becoming scorched when about half grown, through the hot sun shining full upon the berries. I do not know of anything much better than plain tiles for laying the fruit on, as the berries are not then lifted up from the protecting influence of the foliage, and in a general way they certainly come finer than when lying on litter. "J. C. C." says the propping up should be done some days before the fruit commences to colour, but to reap the full benefit from the operation it should be performed as soon as all the berries are well set. If the fruit is well shaded by the foliage, this may not be so important, but where the plants do not grow so luxuriantly, and where the fruit is more or less exposed to the sun, the berries will often scald if moved out of their normal position after they begin to plump up. This is especially the case when the weather suddenly changes from moist to very hot. Here, where beetles eat or spoil nearly every fruit which lies on the ground, we are obliged to support them in some way, and I remember once deferring the laying up of a quantity of Marguerites until they were three parts grown with the above-mentioned result. In plantations where the leaves touch, over-propping up the berries is without danger, and, I feel convinced, increases the size and quantity of the fruit. J. CORNHILL.

TREE ROOTS IN VINE BORDERS.

AMATEUR Vine growers should take care that their Vine borders are not invaded by the roots of trees or shrubs, for if that takes place good crops of Grapes will be at an end. In this locality we have numerous villa gardens, in which there is a vinery that serves the purpose of fruit and plant house combined, and from the generally restricted space in such gardens and the desire to grow in them as great a variety of trees and shrubs as possible, the latter are often planted in dangerously close proximity to the Vine border, the consequence of which is that the roots take possession of it, and quickly use up all the nourishment that should support the Vines. I have recently seen several cases of this sort, and doubtless there are hundreds of others. One of the commonest of intruders in this way is Ivy, which is so frequently planted to cover bare walls. I lately saw a huge stem of it in a potting shed adjoining a vinery, and doubtless the roots were contending for the mastery in the border, yet it had never occurred to the owner that there was any danger in the case of Vines from such subjects having their roots close to the Vine border. In some cases a wall is built to keep them in check, but this seldom proves effectual for any great length of time, as the roots go down under the wall, or even through it, for the mortar being moist offers rather an inducement to them to do so than otherwise. One of the surest ways of telling whether the roots of neighbouring trees or shrubs have penetrated the

Vine border without actually digging down to examine it is that while the Vines look miserable, their rivals denote extra luxuriance. As to the way in which forest tree roots penetrate brick walls, one of my own houses affords an example. Into the wall of this house the roots of a large Elm are continually forcing their way, and shrubs or Ivy are equally annoying. Their entry into Vine borders must be stopped, or all efforts to grow good Grapes will be useless. As regards the cropping of Vine borders with anything else but the Vines, it cannot be too often or too clearly stated that all that is taken out of it in this way is at the expense of the Vines, and where there is no help for it, the loss must be made good by extra supplies of manure, both solid and liquid.

Gosport.

JAMES GROOM.

BUSH FRUITS.

THESE homely fruits have again been plentiful, and to a great extent compensate for the scarcity of wall or choice fruits. Owners of gardens, either large or small, should therefore pay extra attention to a class of fruits that require but the most ordinary care and repay it better than kinds that can only be grown by skilled gardeners, and whose produce even then is precarious. This year, after the most brilliant promise of fruit on record, the Apple only is yielding really good crops; yet how frequently do we find Gooseberries and Currants neglected and all the resources of the place lavished on Peaches, Apricots, &c., that but rarely give satisfaction. It is more the rule than the exception for bush fruits to be planted under the shade of large orchard trees, where they continue to yield moderate crops; whereas if given really good soil and free exposure one-half the number of bushes would yield double or treble the quantity of fruit, and of so much better quality, as to be hardly recognisable as the same kind. Moreover, there is no need to wait weary years for fruit, as is the case with what are called choicer kinds. During the last two years I have planted quantities of the best market sorts, and in nearly every case they have borne fair crops the first year, and a really heavy crop the second—more, in fact, than the value of the bushes. It is useless to plant rooted cuttings simply because they are cheap, and to expect a crop. Really good bushes that have been headed down and replanted and furnished with a good head of fruitful shoots are procurable at from 6d. to 9d. each, and they are far the best to plant. As regards treatment, the soil should be deeply trenched and well manured for all kinds of bush fruits; they should be planted 6 feet apart each way for Gooseberries, and Currants and Raspberries 4 feet from row to row.

THE PRUNING consists in keeping the centre of the bushes open, and red Currants and white varieties can hardly be too closely spurred in. But black Currants which bear the finest fruit on the young wood must have the oldest removed every year to make room for it. Gooseberries require some young wood left every year, but I am no advocate of severe thinning; for in case of severe spring frost, the topmost branches if left moderately thick shelter the fruit on the lower portion, and keep it free from harm. As to position, let black Currants and Raspberries have the most moisture. I lately saw a very fine crop on bushes overhanging a running stream with their roots in masses like Willows. Manure for bush fruits can hardly be too liberally applied, or too rich, if fine fruits are desired. Even the oldest and most decrepit looking bushes will soon recover and make healthy wood, and carry good crops if liberally treated. I find styé manure to act like magic in restoring old and apparently worn-out bushes. Although termed bush fruits, both Gooseberries and Currants are well adapted for wall culture, and scarcely anything that I have tried yields such good crops on walls of moderate height such as are used for dividing villa and suburban gardens. These may be quickly covered by planting healthy young plants and training two shoots right and left, and others from them erect to the top of the wall. The main shoots should be about 9 inches apart, and they only need closely spurring

in afterwards. For dessert Gooseberries and red and white Currants wall treatment is invaluable, as by its aid and that of a fish net or tiffany they may be preserved until very late in the season. As regards

VARIETIES FOR DESSERT, amongst Gooseberries I may mention Warrington, Ironmonger, Keens' Seedling, and Lancashire Lad (red); Yellow Sulphur, Golden Drop, Yellowsmith, Green Gascoigne, Green Walnut, Whitesmith; Snowball, and Snowdrop, white. Currants—Raby Castle, Warner's Grape, Knight's Large Red, and Mammoth, red; White Dutch, white; Lee's Prolific, Black Naples, and Baldwin, black. Raspberries—Carter's Prolific and Fastolf, red; Antwerp and Magnum Bonum, yellow. Raspberries for autumn fruiting are very useful for prolonging the season of out-door fruits; they should be cut down close to the ground in winter, as they bear on the extremities of the young shoots. Of varieties, the Belle de Fontenay and October Red and Yellow are the best I have yet tried. J. G.

Gosport.

SOIL FOR FRUIT TREES.

DURING these last few years the rapid growth of the market fruit trade has quite revolutionised the art of fruit growing, and the mysteries that surrounded many of the most important details of culture have been swept away. Everything is now tested on its merits. I well remember that much of the heaviest work done by young gardeners in days gone by in large forcing establishments was the making and re-making of fruit tree borders, not only for glasshouses, but also wall borders. The amazing quantity of turf and top-spit soil annually used in some gardens I could mention was out of all proportion to what is used now, if measured by the standard of results. It is not my intention to say one word against that ideal composition of the fruit grower, viz., fibrous turf, but that first-rate crops of fruit can be produced without it is too well known to need repetition. There cannot be a doubt that if a correct account could be obtained that the finest Grape Vines in this country have their roots spread out far and wide in the ordinary soil surrounding the vinery, it is obvious that the fibrous portion of turf and top spit soil is soon decayed, even in the best constructed borders, and by the time the Vines reach their most fruitful age the soil will have lapsed into its normal condition—be, in fact, neither better nor worse than the ordinary arable land of the locality. Many most successful fruit growers have, indeed, adopted the plan of selecting a spot where the ground is naturally good, and after erecting their houses they merely trench and add bones, or any kind of manure to the soil, the same as for any other garden crop. The roots are allowed to extend at will, for there are no unnecessary brickwork, paths, or other impediments, and consequently the roots gain in quantity what they lose in quality in the very rich, but restricted root spaces called borders, and certainly as regards quantity of fine Grapes produced annually, these very simply made borders will hold their own with any of those borders that have cost double or treble the amount. The Vines in them, too, promise to keep healthy and fruitful for a greater number of years. Monstrous bunches will certainly not be thus produced, but these are not the aim of market growers, who go in for good saleable examples, not huge bunches.

When forced fruits were a luxury to be enjoyed by owners of extensive gardens only, the soil difficulty was not felt, but now glasshouses for fruits are the accompaniment of nearly every dwelling house of any pretensions, and borders must consist of what can be obtained. I frequently find that where the arrangements are left to hot-house builders that they go in for bricks and mortar in unlimited quantities, and therefore to all making new erections I would say do without any brickwork partitions whatever; let your Vine or Peach tree roots settle the question of inside v. outside borders for themselves, and let them run into the kitchen garden quarters freely if they will do so. If other things grow freely there depend

upon it Vines will do so, and once they get a firm hold of the soil, but little further trouble need be taken as regards supplying their wants. Many are deterred from utilising their glasshouses to the extent they might, simply through an exaggerated notion as to the value of turf, bones, and charcoal. Fruit trees generally, and Vines in particular, will grow freely in any fairly good soil. High feeding is unquestionably the forerunner of many of the ills that Vines in prepared borders are heir to.

Peaches and Nectarines, like other stone fruits, are by some great authorities on fruit culture stated to require very special kinds of soil, but I have not found such to be the case; for instance, young trees in nurseries in all kinds of soils almost invariably grow rather too strongly; in fact, the difficulty is not to get them to make wood, but to ripen it, and I well remember a large house that I not many years ago planted with large trees lifted from the open wall where the soil was the roughest in the whole garden. Nevertheless, the only preparation it received was trenching and adding some farmyard manure to it, and very fine crops were the result. Lately I have seen several instances of Peaches that were gradually dying away, but on having glass roofs put over them, they grew away as freely as could be desired, making clean healthy wood without anything being done to the roots, clearly proving that the soil was not at fault in the first place; and there can be but little doubt that the average of kitchen garden soils is good enough, and, in many cases, too good for the majority of the fruits we grow, either under glass or in the open air.

FIGS I may mention in particular as being generally too liberally treated as regards soil. A hard trodden courtyard is the place for a fruitful Fig tree, and in trees under such conditions I have seen short-jointed growths that annually perfected fine crops, while those with roots in loose, rich earth produced little but leaves as large as those of Rhubarb, or nearly so. Let us now take the Strawberry. What trouble we used to take to get good stiff loam for pot plants and to select the best site in the garden for the beds, and we generally had good crops. But my faith in stiff loam being a necessity has been shaken by seeing the marvellous crops produced in this locality on soil that, if my early teaching was right, is quite unfit for Strawberries. Much of it is so light that it runs through a fork of any kind, and must be dug with a spade, but if simply loosened a good depth, it yields the finest of crops. From my own experience I can confidently say that the soil difficulty is not so formidable a one as it is frequently represented to be, and I would advise owners to fairly test the capabilities of their gardens before replacing their soil by some special mixture; if other crops grow well, fruit trees will take care of themselves.

SOUTH HANTS.

INARCHING VINES.

THIS is a good time to inarch Vines, an operation which may appear difficult to those who know little about it, but which in reality is easily performed and certain in its results. The main object in inarching Vines is to substitute good varieties for bad ones without the expense of rooting out and replanting or incurring the inconvenience of waiting some years after planting before fruit is obtained in any quantity. Let us suppose a viney to have been planted some years ago with half late and half early varieties, and that it is now our wish to have only one kind in the house. In such a case, if the roots are in good condition, I would inarch with the desired kind and thereby not lose a year's crop. Last year I inarched several Vines for a friend. A young cane of Gros Colmar was put on a side shoot of Foster's Seedling. The former made a strong rod last autumn and now it is finishing off several fine bunches of fruit. Apart from this if I wanted to introduce a new Grape for trial in order to have fruit quickly I would inarch it on the side of another and get fruit the following season. There would be no difficulty in doing this, as any ordinary Vine rod

inarched now would form a stem before winter quite capable of bearing a good number of bunches next season. Inarching is better than budding; indeed it is the best way of uniting two varieties, and anyone may accomplish it. In fact, such work is interesting, and to see black and white Grapes growing on the same Vine is always a source of wonderment. Green wood unites best. Old dry stems generally fail.

GREEN SHOOTS for inarching may belong to neighbouring Vines or to a plant in a pot. In the first case it is best to allow a shoot to grow up from near the bottom of the stem of each Vine. These, if not checked, will soon reach the top of the house, but they may be inarched before getting that length. The two must be brought into close contact—so close that they can be tied easily without any pulling in opposite directions. A small slice should then be taken from the side of each. The best place to make this cut is between the buds. The cut should not be more than a quarter of the thickness of the rod in depth, but it may be from 3 inches to 4 inches long. The cut surfaces must correspond; they must be fitted edge to edge, and then bound round with a piece of pliable bast so firmly as to be immovable. In a fortnight or so they will be partially united, and as the shoots swell the ties must be unbound and retied not quite so firmly as before, but still the shoots must be kept close together. In loosening, care must be taken that the two do not separate. Before loosening the main ties I put a temporary one at each end and this keeps all secure. It is seldom the two young canes thus united are both wanted; the one introduced is generally that most valued, and should therefore have most attention. A young cane of considerable dimensions is not always wanted in connection with the stock, and therefore any ordinary side shoot which may be found on all Vines will do just as well. In all cases I cut or pinch away by degrees all the growths and leaves on the shoot inarched in order to throw the whole of the flow of sap into the newly introduced rod.

A VINE IN A POT is used in the same way so far as connecting the scion and stock goes, but the pot generally requires to be placed on a stand near the part to be united, and inarching should take place near the pot so as to secure as much of the plant as possible. An inarched pot Vine must always be well supplied with water at the root until a union has taken place, and I always like to allow the pot and roots to remain until the end of the season, as they assist in developing the top. In autumn or at pruning time it is of the utmost importance that the inarched canes be handled carefully, as although they may be united the least twist the wrong way will sever them. The only way to prevent this is to keep them tied securely until all danger of such a disaster is over.

CAMBRIAN.

ORCHARD MANAGEMENT.

THE general treatment of orchards is bad; nothing could well be worse. An orchard is planted and then left to itself. Often the ground is cropped, sometimes without manure; both trees and grain are thus starved, making the loss a double one. The trees suffer, showing dead branches, and some of them die. Usually, however, Grass is substituted for grain; this is less exhaustive, yet the great complaint of orchards in Grass suffering proves that both Grass and grain are too much for the soil. There is a remedy here and it is twofold: It is manure and underdraining. The ditching should be no less than 3½ feet deep—deeper would be better, as the roots will be less apt to interfere with the drain. This work should be done before the orchard is set, so that the trees may be healthy from the start, and have a vigorous growth. Too much growth at this time can hardly be given a young orchard. Even if continued until late in the season, so that the frost kills the tips, no harm will result to the trees. It is better, however, to have the growth suspended before frost arrests it, and give the wood a chance to ripen. This is done by

having the greater part of the force of the manure expended during the early part of the season, applying less manure, yet sufficient for the necessary growth of the trees. This, experience must determine on account of the variable character of the soil. The best time to apply manure is in the fall, thus giving opportunity for its strength to penetrate to the roots of the trees, preparatory to an early push in the spring, for every day gained then is so much growth gained in the season, and so much earlier the terminal bud will be formed. At first, crops may be grown, and hoed crops are the best. A rotation of Corn, Potatoes, root crops, &c., will be a still further benefit. Weeds may thus be exterminated which, if left would, with their long roots, be a serious drawback to the trees. Thus while the young orchard is growing, the land can be put to good account. As the trees advance, more manure must be used to keep up the enlarged growth, as the roots in a few years will extend pretty much over the whole ground. After this it is desirable to have the orchard in Grass. Some make a lawn of it, and pretty enough it is if given proper management. The trees of an Apple orchard should be no less than 40 feet apart; farther would be better, but it is so hard to get people down to the liberal point in planting. There should be space between the trees for air and sun, as well as among the branches; otherwise with mature trees there will be dead branches, Moss, mildew, and small fruit, with a loss in quality. With full sunshine and air in and around the trees, health and brightness of limb and foliage will result, with fruit large, clean, and well coloured.

DIFFERENT FERTILISERS may be used to keep the sod well established, which, if liberally applied, will be sufficient also for the trees, the roots, if near the surface, and they generally are, getting the larger part of the manure. If the soil is deep and rich, so that the roots penetrate well, the Grass gets the greater share of the benefit, and it needs but little, as the clippings from a lawn, if kept on it, go far to make it self-sustaining. Passing the lawn-mower over frequently and regularly, the clippings, which are then short, will disappear in the Grass and soon decay, thus feeding the soil constantly. Fine stable manure, applied in the fall and brushed down, will soon disappear in the spring. If superphosphate does well (which trial will determine), that may be sufficient, the effect extending over two or three years, and a good article in the way of coarse-ground bone is safe for three years; it should be applied in the fall for effect in the spring. Where the roots of the trees are confined to a shallow surface soil, manure should be applied every fall, and in the necessary quantity, which experience will determine. Too heavy manuring would push the wood growth at the expense of the fruit. The roots, having direct access to the manure, take up its strength rapidly. The greatest success is attained by keeping up a uniform growth, having in view a proper balance between the wood and fruit growth. This can usually best be done by frequent and lighter manuring, though good results are obtained where one application is made to do service for two years.

CULTIVATING a mature orchard is unnecessary. It may be kept in permanent Grass, either for pasture, meadow, or lawn. If kept in pasture, the affected fruit will be eaten by the stock as it drops, thus to some extent arresting the propagation of injurious insects. If it is decided to keep the Grass clipped, an early crop of hay may be taken and the sod kept shaven after that. The crop, if of the early and strong growing Grasses, will mature sufficiently to be removed by the middle of June. This may be done with June Grass (*Poa pratensis*), which stands the shade well, and is a good lawn Grass. Orchard Grass does still better as to yield and endurance of shade, but gives a rough surface to the ground, from its disposition to grow in tussocks. Grass is more desirable than grain in an orchard. After the trees have attained size, a grain crop cannot be made profitable, principally on account of the shade. There is more money in hay and pasture, and least in a lawn.—Country Gentleman.

INDOOR GARDEN.

NOMENCLATURE OF PALMS.

THE following list of Palms is taken from the Kew Garden Report for 1882. It will prove a valuable aid in correctly naming the numerous species of Palms which in recent years have found their way into gardens. The compilation of an accurate catalogue of Palms under cultivation is a matter of great difficulty, owing partly to the impossibility of determining them till they flower, and partly to the practice that prevails in the nursery trade of attaching provisional names to seedling Palms which, though unrecognisable both as to genus and species when in that state, are as full grown plants well known under older names. The Kew collection is the oldest of any note; it was eclipsed altogether between the years 1820 and 1845 by the famous collection of the brothers Loddiges, at Hackney, which in the latter year contained upwards of 200 kinds, but which was dispersed shortly afterwards. Now it has but two rivals, a European and Asiatic one, namely, the magnificent collection made chiefly by Herr Wendland in the Botanic Gardens at Herrenhausen, Hanover, and in the palmatum of the unrivalled Tropical Gardens at Buitenzorg, in Java. The Royal Botanic Garden at Calcutta would doubtless hold rank with these were it not for the destructive cyclones which have on several occasions decimated its contents, and especially struck down its Palms. The following statistics will give an idea of the progress made in the introduction of Palms into cultivation, premising that before the first edition of Aiton's "Hortus Kewensis" only two were generally known at Kew, the dwarf Fan Palm (*Chamærops humilis*) of the Mediterranean, and the Date (*Phoenix dactylifera*), both cultivated in the Chelsea Garden about 1731, and probably earlier elsewhere. Palms enumerated in Miller's "Gardeners' Dictionary" (1731), 7; in Aiton's "Hortus Kewensis," ed. i. (1779), 10; in Aiton's "Hortus Kewensis," ed. ii. (1813), 24; in Loudon's "Hortus Britannicus" (1830), 131; in Loddiges' "Catalogue" (1845), 210; in Wendland's "Index Palmarum" (1853), 287; in Buitenzorg Botanic Gardens (1860), 273; Herrenhausen Gardens (1882), 445; in Kew (1882), 420.

In the following list (which has been arranged alphabetically instead of systematically, as in the "Kew Report") the names that have the mark = after them are not now considered true genera or species. In some cases the species is synonymous, or is a variety of another—for example, *Acanthophoenix Herbstei* is now merged into *A. crinita*. In other instances the species thus marked are to be found placed in another genus—for example, *Areca alba* is now named *Dictyosperma album*. Some of the old genera, too, have either been classed with other genera or eliminated from the Order according to its latest revision.

Acanthophoenix crinita, Mauritius and Bourbon
Herbsti = *A. crinita*
rubra, Mauritius and Bourbon
Acanthorhiza aculeata, Cent. America
arborescens, Hab. ?
Mocinni, Cent. America
Acrocomia aculeata = *A. sclerocarpa*
cubensis = *A. lasiospatha*
sclerocarpa, Brazil and West Indies
lasiospatha, South America
Alphaneas = *Martinezia*
Ancistrophyllum secundiflorum, W. Africa
Archontophoenix Alexandræ, Queensland
Cunninghami, Queensland and N. S. Wales
Areca alba = *Dictyosperma album*
aurea = *D. aureum*
Alicie, Trop. Australia
Baueri = *Rhopalostylis borbonica* = *Dictyosperma album*
Catechu, Trop. Asia (cult. ?)
concinna, Ceylon
crinita = *Acanthophoenix*
Dicksoni = *Pinanga*
Areca erythropoda = *Cyrtostachys Renda*
furfuracea = *Dictyosperma glandiformis*, Moluccas
latisepta = *Pinanga lutescens* = *Hyophorbe indica*
madagascariensis = *Dypsis monostachya* = *Baculana nobilis* = *Nephrosperma Van Houtteanum*
oleracea = *Oreodoxa rubra* = *Acanthophoenix rubra* = *Dictyosperma sapida* = *Rhopalostylis speciosa* = *Hyophorbe amaricaulis*
triandra, Bengal and Assam
Verschaffelti = *Hyophorbe Arenga Bonnetii*, East Indies
obtusifolia, Java, Sumatra
saccharifera, Malaya Arch., Burmah, &c.
Wightii, Malabar
Astrocaryum aculeatum, Guiana
argenteum = *A. Malybo aureum*, Trinidad
filare, Hab. ?
Malybo, New Grenada
mexicanum, Mexico
Muru-Muru, Brazil

Astrocaryum rostratum, Brazil
sclerocarpum = *A. aculeatum*
vulgare, Brazil
Attalea amygdalina, New Grenada
Cohune, Honduras to Guiana
compita, Brazil
funifera, Brazil
grandis = *Cocos botryophora*
maracabensis, Venezuela
spectabilis, Amazon River
Baculana monostachya, N. S. Wales, Queensland
Bactris baculifera, hab. ?
Binoti, Hab. ?
Caraja, Hab. ?
elatiar, Amazon River
elegans, Brazil
Maraja, N. Brazil
minor = *Gulielma speciosa obovata*, Hab. ?
Plumeriana, West Indies
simplicifrons, Trinidad to Brazil
Beethovenia cerifera = *Ceroxylon andicola*
Bentickia Condapanna, Travancore
Borassus flabelliformis, Trop. Africa (cultivated in India)
Brahea dulcis, Mexico
filamentosa = *Washingtonia filifera*
glauca, Hab. ?
lucida, Mexico
nobilis, Hab. ?
robusta = *Washingtonia filifera* var.
Roezli, Hab. ?
Calamus adspersus, Java
andamanicus, Andaman Islands
aspermus, Java, Assam
australis, Trop. Australia
calicarpus, Malacca
calolepis, Java
ciliaris, Sumatra, Java, Borneo
cochin-chinensis, Cochinchina
dealbatus = *Acanthophoenix rubra*
delicatulus, Ceylon
erectus, Silhet, Pegu, Chittagong
fissus, Borneo
farinosus, Hab. ?
Flagellum, Sikkim, Himalaya
floribundus, Upper Assam
heteroides var. *refractus*, Java
hystrix, Moluccas, Java
Jenkinsianus, Assam, Himalaya
latifolius, East Indies
leptostachys, Khasia, Sikkim, Assam
Lewisianus, Penang
marginatus, Borneo
melanochates, Java
montanus, Sikkim Himalayas
Mucieri, Trop. Australia
Nico ai, Hab. ?
Oxleyanus, Hab. ?
rachistemonus, Ceylon
palembanicus, Sumatra
perianthus, Sumatra
Rotang, Bengal, Assam, &c.
Reclburghi = *C. Rotang*
Royleanus, Trop. Himalaya
rudens, Java
schizospathus, Sikkim and Khasia Mountains
secundiflorus = *Ancistrophyllum*
tenius, East Indies
trichorus, Sumatra
Verschaffelti = *Acanthophoenix crinita*
vinimalis, Celebes
Wightii, Decan
Calyptrocalyx spicatus, Moluccas
Calyptrogyne elata, Hab. ?
Giesbrechtii, Mexico
sparguensis, Hab. ?
spicigera, Guatemala
Swartzii, West Indies
Calyptronoma = *Calyptrogyne*
Caryota Alberti, Tropical Australia
Blancii, Philippines
Cuningii, Philippines
elegans, Hab. ?
furfuracea, Java
Griffithii = *C. sobolifera*
majestica, Hab. ?
Caryota maxima, Java
ochlandra, China
obtusata, Upper Assam
Rumphiana, Borneo and Moluccas
sobolifera, Malacca Islands
speciosa, Hab. ?
urens, Malay Peninsula
Catoblastus pramorsus, Venezuela
Ceratolobus glaucescens, Java
Ceroxylon andicola, New Grenada and Venezuela
australe = *Juania*
Chamedorea amazonica, Amazon River
Arenbergiana, Guatemala
Aspariana, Guatemala
concolor, Mexico
corallina, Venezuela
Deckeriana, Guatemala
desmonoides, Mexico
elatiar, Mexico
elegans, Mexico
elegantissima, Mexico
Ernesti-Augusti, New Grenada
fenestrata = *Malortieagrallis*
fibrosa = *Synechanthus formosa*, Hab. ?
fragrans, New Grenada, Peru
geonomeformis, Guatemala
glaucofolia, New Grenada
graminifolia, Costa Rica
Lindeniana, Mexico and Guatemala
Martiana, Mexico
mexicana = *C. Sartorii*
microphylla, Chiriqui
oblongata, Mexico
pygmaea, New Grenada
Ruizi, Peru
Sartorii, Mexico
scandens, Mexico
simplicifrons = *C. Ernesti-Augusti*
stolonifera, Hab. ?
tenella, Mexico
Wendlandi, Mexico
Chamærops acaulis = *Sabal Adansoni*
arborescens = *C. humilis* var.
elegans = *C. humilis*
excelsa = *Trachycarpus Fortunei* = *Trachycarpus humilis*, S. Europe and N. Africa
h. var. arborea
hystrix = *Rhapidophyllum*
Khasyana = *Trachycarpus macrocarpa*, Hab. ?
Martiana = *Trachycarpus Mocinii* = *Acanthorhiza Palmetto* = *Sabal Ritchiana* = *Nannorhops stauracantha* = *Acanthorhiza aculeata*
Cocos amara, West Indies
australis, S. Brazil
Blumenau, S. Brazil
Bonnetii, Hab. ?
botryophora, Brazil
Bursei, Hab. ?
campestris, Brazil
capitata, Brazil
chilensis = *Jubæa spectabilis*
comosa, Brazil
coronata, Brazil
elegantissima = *C. Weddelliana*
flexuosa, Brazil
insignis, Brazil
Mikaniana, Brazil
nucifera, Tropics
pernambucana, Brazil
plumosa, Brazil
Procopia, Brazil
Romanzoffiana, S. Brazil
Sancona, Brazil
schizophylla, Brazil
Weddelliana, Brazil
Yuramagus, Brazil
Copenicia cerifera, Brazil
tormentor, Venezuela and West Indies
Corypha australis = *Livistona cerifera* = *Copenicia Gebanga*, Java
umbaculifera, S. India and Ceylon
Cyphokentia robusta = *C. Viellardi*
Viellardi, New Caledonia
Cyrtostachys Renda, Malay Archipelago
Desmonorops = *Calamus Deckeriana nobilis*, Mauritius
Desmoncus granatensis, New Grenada
Desmoncus major, Trinidad
minor, West Indies
polycanthus, Brazil and Guiana
Dictyosperma album, Mauritius and Bourbon
aureum, Rodriguez Island
rubrum, Mauritius
furfuraceum, Mauritius
Didymosperma distichum, Sikkim
nanum, Assam and Khasia Mountains
porphyrocarpon, Java
tremulum, Philippine Isles
Diplothemium campestre, Brazil
caudescens, Brazil
Drymopheus ceramensis, Ceram
oliviformis, Moluccas
Rumphii, Moluccas
singaporensis, Singapore
Dypsis Hildebrandtii, Madagascar
madagascariensis, Madagascar
pinnatifrons, Madagascar
Elais guineensis, W. Trop. Africa
melanococca, Cent. America
Erythraea edulis, California
Euterpe acuminata, Venezuela
antioquiensis = *E. montana*
montana, Isl. of Granada
oleracea, Tropical America
Gaussia Giesbrechtii, Hab. ?
princeps, Cuba
Geonoma Cardenii, Hab. ?
chiriquensis, Hab. ?
cuneata, Costa Rica
fenestrata = *Malortieagrallis*
gracilis
Giesbrechtiana = *Calypetrogyne*
gracilis, Costa Rica
macrostachys, Amazon
microstachya, Amazon
magnifica = *Calypetrogyne Giesbrechtiana*
Martiana = *Asterogyne Pohlana*, Brazil
princeps, Hab. ?
pumila, New Grenada
Schottiana, Brazil, Guiana
Seemannii, Nicaragua
Spixiana, Rio Negro
vaga, Brazil and W. Indies
Verschaffelti = *Calypetrogyne Giesbrechtiana*
Glaziova elegantissima = *Cocos Weddelliana*
insignis = *Juania australis*
Martiana = *Cocos Weddelliana*
Giesbachia = *Howea*
Gulielma speciosa = *Bactris minor*
Hedyoscepe canterburyana, Lord Howe's Island
Heterospatha elata, Amboyna
Howea Belmoreana, Lord Howe's Island
Fosteriana, Lord Howe's Island
Hydiastele Wendlandiana, Tropical Australia
Hyophorbe amaricaulis, Mauritius
Commersoni = *H. indica*
indica, Mauritius
Verschaffeltii, Mauritius
Hyospatha elata = *Pigafetta aricaulis* = *Hyophorbe pubigera* = *Frestoea*
Hyphane thebaica, Upper Egypt, Abyssinia, &c.
Iriartea deltoidea, Peru
exorhiza = *Socratea robusta* = *I. deltoidea*
Juania australis, Juan Fernandez
Jubæa spectabilis = *Chili*
Kentia Belmoreana = *Howea canterburyana* = *Hedyoscepe costata* = *New Guinea*
elegans = *Veitchia Storckii*
Forsteriana = *Howea gracilis* = *Kentiopsis oliviformis*
Lindeni = *Kentiopsis macrocarpa*
Luciana = *Veitchia*? Fiji Islands
Macarthurii = *Ptychosperma macrocarpa* = *Kentiopsis monostachya* = *Baculana oliviformis* = *Kentiopsis robusta* = *Cyphokentia Viellardi*
Kentia sapida = *Rhopalostylis*
Storckii = *Veitchia*
Viellardi = *Cyphokentia*
Wendlandiana = *Hydiastele*
Kentiopsis macrocarpa, New Caledonia
oliviformis, New Caledonia
Korthalsia Junghuhnii, Java
scaphigera, Andaman Isla.
Latania aurea = *L. Verschaffeltii*
borbonica = *Livistona chinensis*
Commersoni, Mauritius and Bourbon
glaucophylla = *L. Loddigesii*
Loddigesii, Mauritius
rubra = *L. Commersoni*
Verschaffeltii, Mauritius
Leopoldina pulchra = *Cocos Weddelliana*
Licuala acutifida, Singapore and Penang
amplifrons, Sumatra
elegans, Sumatra
grandis, New Britain
horrida, Java
peltata, Bengal, &c.
Rumphii, Moluccas, Borneo
spinosa = *L. Rumphii*
Veitchii (hort.)
Linospadix monostachya = *Baculana*
Livistona altissima, Java
australis, E. Australia
chinensis, S. China
Drudei, Hab. ?
Huogendorpii, Hab. ?
humilis, Trop. Australia
inermis, Trop. Australia
Jenkinsiana, Assam and Sikkim
Leichardti = *L. humilis*
mauritiana = *L. chinensis*
occidentalis = *Brahea dulcis*
oliviformis, Java
Ramsayi = *L. inermis*
rotundifolia, Malay Islands
subglobosa, Java
Lodoicea seychellarum, Seychelles
Loxococcus rupicola, Ceylon
Malortiea gracilis, Costa Rica
intermedia, Costa Rica
Mancaria sacifera, Central and S. America
Martinezia Alphonse, Caracas
caryotaefolia, New Grenada
disticha, Hab. ?
erosa, West Indies
leucophaea = *M. disticha*
Lindeniana, New Grenada
Mauritia flexuosa, Brazil and Guiana
Maximiliana caribæa, West Indies
Martiana, N. Brazil and Guiana
regia = *M. Martiana*
Medenia Argun, Nubia
Metroxylon amicarum, Friendly Islands
elatum = *Pigafetta vitense*, Fiji Islands
Morenia Chonta = *Juania australis*
corallina = *Chamedorea Deckeriana* = *Chamedorea fragrans* = *Chamedorea oblongata* = *C. Sartorii*
Nannorhops Ritchiana, India, Afghanistan, Persia
Nenga pumila, Malay Islands
Wendlandiana = *N. pumila*
Nephrosperma Van Houtteanum, Seychelles
Nipa fruticans, Australia and India
Nunnezharia geonomeformis = *Chamedorea tenella* = *Chamedorea Enocarpus*
Bacaba, Rio Negro
Batana, Rio Negro
utilis = *Euterpe acuminata*
Oncosperma fasciculatum, Ceylon
filamentum, Java
Van Houtteanum = *Nephrosperma*
Orania macrocladus, Malacca
regalis, New Guinea
Oreodoxa acuminata = *Euterpe granatensis*, New Grenada
oleracea, West Indies
regia, West Indies
ventricosa = *Gaussia Giesbrechtii*

Phœnicophorium seychel-
larum = *Stevensonia*
grandifolia
Phoenix acutis, Cent India
dactylifera, North Africa
farinifera, Deccan
Hanceana, China
leuconensis = *P. spinosa*
Ouseleyana, Central India
paludosa, Andaman
reclinata, S. E. Africa
rupicola, Sikkim Himalaya
spinosa, W. Trop. Africa
sylvestris, India
tenuis Hab.?
zeylanica, Ceylon
Pholidocarpus Ihur, Moluc-
cas
Phyllephas macrocarpa,
New Grenada
microcarpa, Peru
Picea-*lata* etia, Celebes
Pinanga coronata, Java
Kuhli, Java
latisepta, Sumatra
maculata, Singapore?
maliana, Penang and
Malacca
Nenga = *Nenga pumila*
patula, Sumatra
ternatensis, Moluccas
Veitchi, Borneo
Plectocoma assamica, Assam
elongata, Java, Malacca,
Penang
himalayana, Sikkim Hi-
malaya
spectabilis, Hab.?
Prestea pubigera, Trinidad
Pritchardia anrea, Hab.?
filifera = *Washingtonia*
filifera
Gaudichaudia, Sandwich
Islands
grandis = *Licuala*
macrocarpa, Hab.?
Marti, Sandwich Islands
pacificia, Fiji Islands
Ptychosperma Alexandræ =
Archontophenix
coccinea = *Cyrtostachys*
Renda
Cunninghami = *Archonto-*
phenix
Drudei, Hab.?
filifera, Fiji Islands
gracilis, New Ireland
Macarthuri, Tropical Aus-
tralia
Rumphii, Moluccas
rupicola = *Loxococcus*
Seemannii, Fiji Islands
singaporensis = *Drymo-*
phloeus
Raphia longiflora, W. Africa
Rufia, Madagascar
Ravenia Hildebrandtii, Co-
mororo Islands
Regelia princeps = *Steven-*
sonia grandiflora
Rhaphidophyllum hystris,
South-West States
Rhapis cochinchinensis,
Cochin China
flabelliformis, China
f. var. *foliis variegatis*
humilis, Japan
Sirotisk = *R. humilis*
Rhopalostylis Baueri, Nor-
folk Island
sapidia, New Zealand

Roscheria melanochætes,
Seychelles
Sabal Adansonii, S. W. States
Blackburniana, Bermuda
coruscens, West Indies
glaucescens, Trinidad
mauritiaformis, Vene-
zuela, Trinidad
Palmetto, S. W. States
princeps, Hab.?
Sanfordi, Hab.?
serulata = *Serenoa*
umbraculifera, W. Indies
Saguerus = *Arenca*
Sagus amicarum = *Metroxyl-*
on
vitiensis = *Metroxylon*
Scheelia excelsa, Venezuela
Unguis, Venezuela
Seaforthia elegans = *Archon-*
tophenix Cunninghami
Serenoa serulata, S.W. States
Socratea exorrhiza, Guiana,
Amazon River
Stachyophorbe Deckeriana =
Chamædorea
Stevensonia grandifolia,
Seychelles
Syagrus amara = *Cocos*
botryophora = *Cocos*
capistris = *Cocos*
Sancona = *Cocos*
Synecanthus fibrosus, Gua-
temala
Teymannia altifrons, Su-
matra
Trachycarpus exco'sus,
Japan
Fortunei, China
khasyanus, Khasia Mts.
and Burmah
Martianus, Himalaya
Thrinax arborea = *Acantho-*
rhiza
argentea, West Indies
barbadensis, Barbadoes &
Guadaloupe
Chuco = *Trithrinax brasi-*
liensis
elegans = *T. radiata*
elegantissima = *T. radia*
excelsa, Jamaica
gracilis, Hab.?
Marti, Cuba
parviflora, West Indies
Pumilio, Jamaica
radiata, West Indies
tunicata = *Brahea dulcis*
Trithrinax aculeata = *Acan-*
thorhiza
brasiliensis, Brazil
Veitchia Joannis, Fiji
canterburyana = *Hedy-*
scepe
Storckii, Fiji
Verschaffeltia splendida,
Seychelles
melanochætes = *Roscheria*
Washingtonia filifera, South
California
Wallichia caryotoides, East
Bengal, Burmah, &c.
densiflora, East Nepal
disticha = *Didymosperma*
nana = *Didymosperma*
porphyrocarpa = *Didy-*
mosperma
tremula = *Didymosperma*
Welfia regia, New Grenada
Zalacca edulis, Java, Moluc-
cas

PLANTS IN FLOWER:

Carnation Comate de Chambord.—A lovely variety with large full flowers of a delicate blush tint and deliciously Clove-scented. Of this a handful of blooms comes to us from Mr. Jones's nursery at Lewisham, picked from two-year-old plants which Mr. Jones states carry as many as 200 blooms.

Gloxinias.—At the Upton Nurseries, Chester, may now be seen *Gloxinias* of all shades of colour beautifully in bloom. They belong chiefly to the erect flowering class, which now appears to have almost or quite superseded the horizontal-flowered race. Diversity and richness of colour, combined with floriferousness and sturdy growth, render this strain an exceptionally fine one.

Carnation Gloire de Nancy.—A bunch of flowers of this lovely new Clove Carnation comes from Mr. Ware, in whose nursery at Tottenham it is now in great beauty. The flowers are large, pure white, and possess a delicious Clove-like perfume. This variety is strong in growth and a most profuse flowerer. Though the excessive drought in early summer almost dried up the plants, they have withstood it bravely and flowered freely, though not so profusely probably as they otherwise would have done.

Pink Mrs. W. M. Welsh.—In this new Pink we have one of the most beautiful pure white varieties yet raised; indeed, it is superior in all respects to all other white Pinks we have yet seen. Its flowers are large and full, its petals are broad, smooth, and of a thick texture, and the plant is a strong grower and a profuse flowerer. Some flowers of it have been sent to us by Messrs. Dicksons & Co., Edinburgh, who raised this variety in their nursery, at Pilrig Park. The raisers describe it as more resembling a *Gardenia* than a Pink; the comparison is appropriate.

The purple-flowering Raspberry, as it is called in Dr. Asa Gray's "Manual of the Botany of the Northern United States," or the sweet-scented-leaved Bramble, as Loudon calls it in his "Encyclopedia of Trees and Shrubs," has long been an inmate of British gardens, but is nevertheless far too seldom seen. It is a charming deciduous shrub of about 6 feet in height, and produces in British gardens a succession of its handsome large purple-red flowers from June until September. It is an excellent plant for the wild garden, and requires no attention after being planted.

Erica Maweana.—A charming little Heath and one of the best of the hardy varieties. It is in the way of *E. ciliaris*, but the flowers are larger and the spikes more massive. The colour is a rosy pink; therefore soft and pretty. It is dwarf in habit and a vigorous grower. It is a capital plant for the rock garden and possesses the rare character of flowering almost throughout the summer. Some bushes of it have been highly attractive for some weeks in the rock garden at Messrs. Paul's hardy plant nursery at Broxbourne, and promises to be in bloom for some weeks to come.

Seedling Carnations.—Several correspondents send flowers of their seedling Carnations, all beautiful, and some decidedly worth naming, but that we must leave to specialists who have means of comparison. Some exceptionally fine seedling flowers come from Mr. Baylor Hartland, of Cork, and a similarly fine gathering of blooms has been sent to us by Mr. Underdown, of Colehays, Bovey Tracey. Some of the yellow ground varieties in this gathering are strikingly handsome. Mr. Underdown states that he finds these Carnations invaluable in many ways when cut, and for this purpose he grows them in borders in the kitchen garden. By sowing seeds every year he is able to keep up an ample stock of vigorous plants.

Platycodon pumilum.—This is a variety of the older *P. grandiflorum* and decidedly superior in some respects. It is not so tall; therefore is less liable to be broken by wind as the typical form is. The flowers, too, are larger and of quite as deep and rich a purple as the older kind. It is one of the numerous fine introductions which Messrs. Veitch have made from Japan through their collector, Mr. Maries. This plant is now in great beauty in the rock garden in Messrs. Paul and

Son's nurseries at Broxbourne, where it thrives admirably on a sloping bank in good loamy soil. Whether it is harder than the original we cannot say, but we imagine it is, seeing that it comes from a colder climate.

Callipsyche [mirabilis].—The flower of this rare bulbous plant is very curious and interesting, inasmuch as it is different from that of any other plant with which we are acquainted. It may be said to consist wholly of stamens, which protrude about 2 inches beyond the sepals. On a flower-stem sent to us by Mr. F. Horsman, of Colchester, there are about a dozen flowers arranged symmetrically in a semi-circular manner on the top of the stem. The whole flower is a pale straw colour, therefore not very showy. Mr. Horsman observes that it is called the Umbrella Flower. Its bulb and growth are similar to those of the *Eucharis*. This species is comparatively new. It was described by Mr. Baker, of Kew, and figured in the "Refugium Botanicum," tab. 168.

Impatiens flaccida.—A few weeks ago we pointed out the identity of the Balsam known as the white variety of the Zanzibar species with the *I. flaccida* of India, figured in the *Botanical Magazine*, t. 5276. Typical *I. flaccida* has alternate foliage, the petioles of which along with the stem is purplish in colour. The flowers, too, are pale purple, in size resembling those of the white Balsam just referred to. In the Begonia house at Kew, both the true *flaccida* and its variety alba, and the Zanzibar Balsam may now be seen in flower. In the same house the shrubby, rarely flowered *I. Hookeriana*, and that little gem amongst *Impatiens*, viz., *I. Jerdoniae*, may also be seen. These indoor Touch-me-nots are useful plants for summer blooming, and as they are easily kept through the winter by means of seeds, they should find a place in all indoor collections.

Lilium testaceum.—This beautiful Lily is justly a favourite in gardens, being distinct from any other in point of colour. It is also graceful in growth, and, above all, easily cultivated. Its peculiar nankeen-tinted flowers, moreover, are deliciously fragrant—very different from the powerful and unpleasant odour which characterises the scarlet Turk's-cap Lily, which is probably one of its parents, the other being the Madonna or common white Lily. The Nankeen Lily, as *L. testaceum* is popularly called, combines the characteristic features of both parents in a marked degree, and there is no probability of anyone mistaking it for another when once they have seen it. This Lily is apparently grown to great perfection at the Newton Nurseries, Chester, whence Messrs. James Dickson and Sons send us some fine specimens, carrying as many as a dozen flowers on a stem. We should like to know the character of the soil and the aspect under which these fine examples have been produced.

Spiræa cæspitosa.—This may be classed amongst the rarities now in flower in the collection of alpine in the York Nurseries. It is a miniature species, not attaining more than from 3 inches to 4 inches in height. It forms dense carpet-like tufts—in fact, in general habit it resembles *Globularia nana*, except that the foliage is silvery grey, while that of the latter is dark green. The flowers, which are white and very small, are borne on dense little spikes supported on stems from 2 inches to 3 inches high. The plants of it at York, which are few, are all in good health, and it is to be hoped that seed may be procured this season. It may perhaps be well to remark that although the plant is, according to Dr. Parry's statement, always found in crevices and fissures of calcareous rocks, it nevertheless thrives best when planted in a compost suitable for the growth of hard-wooded *Ericas*, i.e., peat and white sand particularly well drained.—R. P.

Lathyrus latifolius.—The varieties of this Everlasting Pea contribute a deal of beauty to the open-air garden at this season, their flowering being just at its height. From the Botanic Garden at Edinburgh Miss Owen sends us sprays of the white variety and the rich crimson-purple-coloured

SHORT NOTES.—INDOOR.

Anthurium Chantrieri.—This was exhibited by M. Chantrier, of Montefontaine, at a late meeting of the French National Horticultural Society and gained a first-class certificate. It is a handsome and distinct species.—J. C. B.

Croton Marquis de l'Aigle.—This is a new kind raised by M. Chantrier, Montefontaine, the foliage of which is finely coloured. It obtained a first-class certificate from the French National Horticultural Society.—J. C. B.

Watering Lilium auratum.—Many of the failures which occur in the culture of this Lily when grown in pots are, I think, caused by overwatering. If once the soil becomes close and the roots inactive, free growth ceases. Until the flower buds are well formed, the soil should nearly become dry between each watering, then the tender fibres remain healthy.—J. C. B.

Lapageria leaves (J. F.).—Your *Lapageria* is badly attacked by thrips. Two or three good fumigations with an interval of about ten days between them will rid the plant of them; or if not too large, dip the plant in a mixture consisting of 1 lb. of soft soap and half-a-pint of strong Tobacco water to 2 gallons of water. Before the plant is quite dry wash it clean with soft water. Repeat the operation in a fortnight. If the plant be too large to dip, wetting thoroughly with the above mixture will do as well.—G. S. S.

sort called splendens. These are both very beautiful plants, and indispensable in any garden, large or small. We were much struck the other day with the luxuriance of this Everlasting Pea in Messrs. Paul's hardy plant nursery at Brixton, where it is grown in quantities in a variety of positions. In some cases it is trailing over the surface of the border; in others it forms a charming drapery to old stumps; but the most beautiful examples of it are those tumbling over the sides of huge boulders in the rock garden. Here its beauty is displayed to advantage, and its elegant growth adds to the beauty of the flowers. We found here the new pink variety *delicatus*, which was certificated last week at South Kensington. It is a lovely sort, forming a delightful contrast to the deep variety *splendens* and the white.

Gladiolus Lafayette.—Since we figured in THE GARDEN some years ago two of M. Lemoine's hybrid Gladioli, raised by intercrossing *G. purpureo-auratus* with varieties of *G. gandavensis*, he has made great progress in the improvement of this distinct and beautiful new race of Gladioli. He has recently distributed several fine kinds, among them being the one named *Lafayette*, for which Messrs. Veitch received a first-class certificate at South Kensington last week. A fine spike of this new variety has been sent to us by the New Plant and Bulb Company, Colchester, together with another named *Rochambeau*. *Lafayette* is much the best, having bold flowers as large as those of the finest Ghent varieties, but quite distinct, the sepals being more hooded, the flowers altogether more resembling those of one of the parents, *G. purpureo-auratus*. The colour of the upper sepals is a soft creamy white, with just a suggestion of salmon-pink, while the three lowermost sepals are heavily blotched and feathered with deep crimson, shading to purple and bordered with lemon-yellow. *Rochambeau* has paler flowers and more open; therefore more resembles a *gandavensis* variety.

Microsperma bartonioides.—In the Cambridge Botanic Gardens this handsome Californian annual is grown in pots for the decoration of the conservatory, a purpose for which it is well adapted. Sown in pots early in the spring, and grown in a close frame, this plant grows rapidly into specimens of from 1 foot to 2 feet in height, freely branched, and upon these there is a continuous display of large, yellow, bell-shaped flowers, with a centre crowded with hair-like stamens, reminding one of the flowers of a *St. John's Wort*. It is an annual worthy of general cultivation as a pot plant in addition to its usefulness for the open border in sheltered situations. Unfortunately the frail nature of the flowers is against their being used in very exposed and rainy districts, but favourably situated this plant is as beautiful as any annual with which we are acquainted. Under the name of *Bartonia aurea*, the above plant is often to be seen, and *Mentzelia* is also sometimes attached to the same plant.

Nelumbium luteum.—This rare Water Lily produced flowers at Oxford about two years ago; it flowered again in the Regent's Park Botanic Gardens last year, and now it has again developed its yellow blossoms at Cambridge where, Mr. Lynch informs us, the treatment to which it has been subjected has not materially differed from what is usually successful in the case of the rose-flowered species, *N. speciosum*. In none of the above instances has the size of the flowers been anything like so large as we are led to believe occurs on native plants in the Southern States of North America and on the Jamaica form, which is apparently even finer than the American. Possibly more liberal treatment, or rather treatment more congenial to the plant under cultivation, may have the effect of increasing the size of the flowers. A flower which we saw that had been produced by the Cambridge plant was about as large as a goose's egg and not quite clear yellow in colour. We are not aware whether the form so common in some parts of France, and from which we believe the Cambridge plant was obtained, produces larger flowers than that here described; if so, then

we hope the large and beautiful variety which has won for this Water Lily so much fame will soon find its way into our gardens.

A new Tea Rose.—We saw a few days since a long row of bushes in Messrs. Paul's nursery at Cheshunt of the new Tea Rose, Madame Eugène Verdier, which was awarded a first-class certificate last week at South Kensington. Beautiful as it was when shown, it is ten times more beautiful when seen growing, the apricot-yellow tint being much more brilliant. We were much interested in seeing such a fine new Rose, which will unquestionably become as popular as the favourite *Gloire de Dijon*, from which it is either a seedling or sport. It possesses all the luxuriance of growth that characterises *Gloire de Dijon*; the leaves are broad, of firm texture, and of that shining deep green tint that is a sure indication of a robust constitution. It is, moreover, a free and perpetual flowerer, inasmuch as the bushes are still beset with buds, that will continue to expand until autumn. This row of plants is a conspicuous object, even among the acres of Roses to be seen in the Cheshunt Nurseries. The colour is, we consider, quite as fine and distinct as that of the new American variety, W. A. Richardson, which has captivated everyone for the past two or three seasons. It is to be hoped that Messrs. Paul will soon be able to distribute this fine Rose.

Roupellia grata.—The Cream Fruit of Sierra Leone is a relation of the *Allamandas* and *Dipladenias*, to both of which in its floral characters it bears a near resemblance. Were it as free a bloomer as, for instance, *Allamanda Hendersoni*, it would soon rise to the top rank amongst stove climbers, but the comparative rareness of its flowering is against it, notwithstanding the rich colour and delicious odour of its showy flowers. We saw it in flower at Kew two summers ago, and again it is in fine condition just now in the Palm house. The following brief description will convey some idea of the character of this distinct and beautiful plant: Whole plant smooth and shining; stem erect and climbing, soft; leaves opposite, large, tongue-shaped, rather succulent; flowers in stemless terminal cymes, from eight to twelve flowers in each "head." Flowers in shape similar to those of *Allamanda nerifolia*, cream-coloured, richly suffused with deep crimson, especially on the tube. The stamens protrude beyond the corolla tube, so as to form a sort of corona. The flowers remain in good condition either on the plant or when cut and placed in water for about a fortnight. Cream Fruit appears to be the name by which this plant was first known, and which had its origin in the occasional use made of the cream-like juice of its fruit.

Begonia Balmisiana.—Specimens of this distinct looking *Begonia* have reached us from several sources during the past week and we also saw it exhibited by Mr. G. F. Wilson at the last meeting of the Royal Horticultural Society under the name of *B. diversifolia*. With this, however, it has no relation, the true *B. diversifolia* being along with *B. Martiana* included under *B. gracilis*. We also saw a week or two back what we take to be the same *Begonia* in Mr. Ware's nursery, and we have likewise met with it at Kew, always, however, without a name. Flowering specimens of it have been sent to the Kew herbarium authorities to name, and they have been identified with *B. Balmisiana* (syn., *B. populifolia*), a Mexican species. As a flowering plant *B. Balmisiana* ought to find favour in gardens, its large flesh-coloured flowers, rather numerous produced on the ends of the shoots, being of good substance and attractive. In habit it is distinct from any cultivated *Begonia*. The stem is succulent, rather thick, dark red in colour, and grows to a height of about 2 feet. The leaves are thick and fleshy in texture, more or less kidney-like in shape; edges recurved, dentate; nerves palmate. The upper surface of the foliage is rough and frosted, whilst on the under side is a thick layer of bladdery scales somewhat similar to what may be observed on the surface of the leaves of the Ice Plant (*Mesembryanthemum crystallinum*). The lower leaves are nearly a foot in diameter, the upper ones gradually decreasing in

size. In the axils of the leaves clusters of little bulbs or buds are produced similar to what occurs in *B. gracilis* and *Martiana*.

Single flowered Pinks.—Amongst these, a gathering of which comes to us from Messrs. Dicksons & Co.'s Pilrig Park Nurseries, Edinburgh, may be found a deal of beauty, hitherto not much known in gardens. As was the case with Dahlias a few years ago, single Pinks have been quite overlooked in our eagerness for double varieties. We do not say that these single Pinks so much outdistance the double forms in beauty and elegance as the single Dahlias do the doubles, but we consider that they are a valuable class of border flowers capable of creating most beautiful effects on account of their extreme floriferousness. Although their flowers are not so large or so showy individually, they make a showier display by reason of their abundance. A short time ago we saw several large beds of these single Pinks in the Pilrig Park Nurseries and were much impressed with the beautiful display they made. Messrs. Dicksons have paid great attention in improving this race of single Pinks; they have been very discriminative, and eliminated every sort that did not possess merit and was distinct. They have, therefore, a beautiful selection of about a dozen kinds which, no doubt, will soon win popularity. Several of the varieties sent are at present only known by numbers; therefore we cannot individually describe them. Some are pure white, others heavily and lightly blotched, and some are self-coloured. One of the most striking of the named sorts is that named Pilrig Park, which is creamy white with a faint blotch of carmine at the base of each petal; others are the counterpart of the finest of the show Pinks, of which this firm possesses such a fine collection.

Carnation Mary Morris.—The universal popularity which this *Carnation* has won for itself is sufficient proof of its high merits. When it was first exhibited some three or four seasons ago it at once became a favourite; its lovely colour and bold large flowers captivated all who saw it. Beautiful as it is when seen at the shows, however, we think it far more lovely when growing freely in a border, particularly when seen in such quantities as may now be found in the garden of its raiser, Mr. H. G. Smyth, at The Nook, Lower Sydenham, where the other day we saw over a thousand expanded blooms of it. The sight of so many blooms of such a beautiful *Carnation* was charming in the extreme. Every bed was a glow of colour of a clear, yet deep rosy pink. It is, indeed, this peculiar shade of colour, which everyone admires, that has made this *Carnation* so popular; but in order that a *Carnation*, even of this colour, should be first-rate, it must possess other essential properties. It must be a vigorous grower and an abundant flowerer. These qualities *Mary Morris* possesses in a remarkable degree, and combined with them it possesses a stout calyx or pod, which does not split, so that the flowers are held firmly together without the aid of the tie or india-rubber ring, which the generality of *Carnation* blooms require. Mr. Smyth has been singularly fortunate in raising such a popular variety, and, judging by what we saw of his other seedlings, there is every likelihood that next season he will be able to distribute a variety with brilliant scarlet flowers possessing all the good qualities of *Mary Morris*. This new scarlet is named H. G. Smyth. Another promising variety of sterling merit which will probably be made public in a season or two is a clear sulphur-yellow variety which is sure to become popular, as yellow *Carnations* are by no means so plentiful as could be wished. This trio of varieties, the rose-pink, the scarlet, and the yellow, have a bright future before them as regards popularity. As an instance of the floriferousness of *Mary Morris*, it may be mentioned that Mr. Smyth has cut dozens of blooms and brought to London every morning for sale for several weeks past, and the supply will continue for at least some weeks. The flowers meet with a ready sale with the Covent Garden florists on account of its colour and lasting qualities.

ROSE GARDEN.

ROSA BRUNNIANA.

THIS Himalayan species is of great value in the picturesque garden. Its milk-white flowers are in loose clusters, and their pure colour is enhanced by the clear yellow group of stamens. Its glaucous-looking leaves are long and somewhat large, having nine leaflets; they are strangely blue and pale in early summer and droop in a graceful and peculiar fashion. It is a vigorous grower, but as its habit is of a slender and rather rambling character, it would be best used to grow through and among a group of evergreen shrubs, such as Junipers, for some such informal treatment.

G. J.

OWN ROOT ROSES.

HAVING a good many of the newer sorts of Hybrid Perpetual Roses not tried on their own roots, we have been busily engaged lately in putting in as many cuttings as we could get for the purpose of testing their behaviour in this respect, and if I describe the way in which we hope to convert the cuttings into plants in a few months, the information may, perhaps, be acceptable. We have begun the work thus early in order that the plants may be strong enough to be planted out next May. In a general way we do not, however, begin propagating Roses from cuttings before August, but this season, owing to the hot, dry weather that occurred during June, the wood is harder and firmer a month earlier than usual and in suitable condition to form roots quickly. Lengthened experience has shown that very hard and very soft growths must be avoided in selecting cuttings at this time of year, and the quickest way to promote the formation of roots is to give them bottom-heat.

In order to furnish this we collected together the refuse manure found about the frame ground, and with the aid of some leaves we made a hotbed on which we placed a frame. After the bed had stood a few days we put 3 inches of soil on the surface, in which to plunge the pots, and I find there is a steady bottom-heat of about 85°, which, owing to the character of the fermenting materials, promises to continue for some time. The space in the frame is, however, insufficient for the number of cuttings which we intend to put in it, so I intend to utilise another frame in this way from which a crop of Melons has been taken. There is not much heat left in the bed, but still there is a nice moist temperature, and by carefully husbanding the sun heat I do not apprehend any difficulty in rooting all the cuttings which I require in it, but of course not so quickly as on a specially prepared bed.

SELECTING THE CUTTINGS.—Up to the present time there has been but very little choice. Owing to the drought, our Roses made but little growth beyond flowering shoots, and from these we have been obliged to take our cuttings, although we

would rather have had them from shoots which had not produced any flowers. In most cases we have to be satisfied with one cutting from each shoot. In making the cutting we cut off the top down to a good wood bud. At the fourth bud below this we make the base of the cutting, removing the two lower leaves and allowing the two top ones to remain. On the preservation of the leaves left I attach considerable importance, as I am satisfied they play an important part in promoting early root formation. Therefore, both in the insertion and in the after management of the cuttings, every care is taken to preserve them from injury, and to keep them green as long as possible.

POTTING.—Each cutting is put singly in a 2½-inch pot. The compost which I use consists of three parts sifted loam and one of sand. The soil is pressed firm, so that the cutting may rest on a firm bed. I have used small pots this year in preference to putting several cuttings in those

should be gradually reduced. The mat that has been used should be exchanged for a piece of tiffany or old fish net at the end of a month. It is, however, necessary to shade them for six or eight hours in very bright weather up to the middle of September. A good deal depends on the management as to what progress they make. If the shading is carefully attended to, the soil in the pots kept uniformly moist, the leaves and the inside of the frame syringed with water when the shading is taken off in the afternoon, I find that with the aid of bottom-heat we can root them in six or seven weeks, but without bottom-heat they will take two or three weeks longer, and we can generally reckon to save 85 to 90 per cent., which is a fair return for the labour bestowed upon them, which after all is not great. As soon as the cuttings are sufficiently rooted, they will be potted and taken back to the frame. We shall prepare a compost for them consisting of three parts loam to one of manure, and run it through a coarse sieve, and we

shall use 4½-in. pots (with two or three crocks for drainage) in which they will remain until they are planted out. Their winter quarters will be in a large unheated house where they will be secure from severe frost, and where they will only require an occasional watering to keep the soil right about their roots.

THE FUTURE HOME of the plants will be in two long borders, which are about 10 feet wide. These spaces we hope to divide into 6-foot beds and to plant each bed with one variety of Rose, putting nine plants in each, and then peg down the growths. At present our beds of pegged Roses are in mixed varieties, which are very beautiful when in flower, but I think groups of separate and distinct colours will be more effective. The preparation of the soil will take place early in the winter. As the subsoil is not of a kindly character,

we shall have to take out a depth of 12 inches of the bottom and substitute a more suitable compost, for Roses must have a depth of 2 feet of good earth if they are to succeed for any number of years. Early in May the plants will be brought from their winter quarters to a cold pit or frame where they can be gradually hardened off, and finally planted about the end of that month. To put them out earlier would be to run the risk of the tender growth being injured by the cold winds that frequently occur at that time of the year.

J. C. C.

Rosa rugosa.—In the early part of the season this Rose was thickly studded with large showy blossoms which were succeeded by fruits, and now when these latter are still increasing in size the whole bush is again a mass of bloom, large clusters of flowers being formed at the points of every shoot. This Rose undoubtedly ranks high as a flowering shrub; for, apart from its being almost continuously in bloom, its foliage is very handsome, and later in the season the large orange-red fruits or hips render the plant very



Flower spray of *Rosa Brunniiana* (flowers white).

ornamental. It is no uncommon occurrence early in autumn to see a bush of it laden with bright fruits and at the same time studded with blossoms and unexpanded buds. There is a variety in which the flowers are white, but this is as yet comparatively scarce. Amongst seedlings of the white variety I have not been successful in obtaining any of that colour; they have hitherto all been red-flowered. As this Rose grows freely and pushes up quantities of suckers, a better way than waiting so long for seedlings to flower is to take off a few of the suckers with roots attached to them; if this cannot be done, a branch or two may be layered, a way in which it will root freely. Cuttings, too, put in during winter strike fairly well.—W. T.

Triomphe de Rennes.—With the exception of *Maréchal Niel*, *Noisette* Roses are more neglected than they deserve to be. Most of them are more or less tender, and though they grow freely enough—indeed, too much so—if planted against a south wall, the most satisfactory results are not attained except under glass. None of them, I know, can come near this Rose in waxy perfectness of shape or colour; and in another respect if put in a sitting or drawing-room window where there is a full circulation of air and the curtains break the strong rays of the sun, it will scent the largest room deliciously and remain perfect for a long time.—W. J. MURPHY, *Clonmel*.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 62.)

NEPHRODIUM LUCIDUM.—This very distinct species is, I believe, the only one yet in cultivation introduced from Madagascar, although, judging from dried specimens, there exist there some very handsome forms not yet imported alive. *N. lucidum* is of medium growth, and better adapted for pot culture than for planting out on the rockery, as its habit is somewhat stiff and its fronds somewhat crowded. Although during the summer months it will stand well in a cool house, it requires for its full development the heat of the stove all the year round.

Fronds firm in texture, seldom more than 12 inches in height, produced from a short creeping rhizome, and borne on slender, round stalks of a peculiarly dark green colour, quite different from that of their leafy portion; they are bipinnate, with pinnae alternate and about fifteen on each side, and measure about 6 inches in the middle; their upper portion generally pinnatifid.

N. MOLLE, a South American species, is often met with in cultivation, being free in growth and very prolific. It is a most accommodating Fern, succeeding equally well in a stove or in a greenhouse. It does well either under pot culture or planted out in the rockery, where it forms a capital background for showing off to advantage other Ferns of greater importance. Of this species there are some handsome varieties with habits totally different from the parent, as, for example, *N. molle cristatum* and *ramosum*. In these two varieties the whole of the leafy portion of the frond is turned into a large and somewhat coarse crest, more curious perhaps than beautiful, a remark, however, which is not applicable to the charmingly tasselled variety called *N. molle corymbiferum*, an interesting and truly decorative plant of more erect habit than the species from which it originated. It produces branched fronds from 18 inches to 24 inches long, the top of which terminates in a large crest or corymb; the extremity of each leaflet, which are all singularly contracted and much shorter than in the species, is also ornamented with a similar appendage, but of smaller size. This, on account of its curious form, its rapid growth, and its pleasing bright green colour, has taken a leading place among plants specially grown for market. When subjected to cool or intermediate treatment it is never, to my knowledge, attacked by any insect; it is only when grown in too warm a house that it is seen covered with mealy bug, from which pest it is only cleared with difficulty, as the texture of the leaves is very soft, and they

do not stand fumigating or dipping in any insecticide.

Fronds in *N. molle* very soft and produced in abundance from an upright caudex. Under cool treatment they seldom exceed from 12 inches to 15 inches in height, though it is not rare to see them when grown in heat measuring upwards of 2 feet. Pinnae sometimes opposite and sometimes alternate, very deeply lobed, and covered with a soft down of a glaucous pale green colour.

N. MULTILINEATUM.—A stove species from Ceylon, prepossessing in appearance and distinct in character. The gracefully arching habit of its handsome fronds and the bright green colour of the whole plant render it both interesting and attractive. The veins, which are very beautiful, are conspicuously shown in fully developed fronds. It is best adapted for pot culture, and should be carefully guarded from the sun.

Its pinnate fronds, of an arching character, are produced freely from a creeping caudex of a succulent nature; they grow from 20 inches to 26 inches in height, and measure about 8 inches at their widest part. The pinnae, which are somewhat closely set on each side of the rachis and alternate, are lanceolate and deeply serrated.

N. NEVADENSE.—This is one of the few North American species already in cultivation, and one which never fails to be a source of attraction wherever it is grown. An important feature to be observed in the fertile fronds, and which has not been found in any other Fern whatever, is that the divisions of the leaflets are closed or folded together early in the day and only open in the afternoon. Another constant character quite peculiar to this curious species lies in the whole surface of its fronds being copiously dotted with minute shining resinous globules. The name *Nephrodium* or *Aspidium nevadense* was given by Boissier to another and quite a different Fern of Spanish origin, but this is the species from Sierra Nevada of Northern California, where it is found growing in great abundance along creeks and in moist meadows, where it shares the company of the swamp-loving *Darlingtonia*, and therefore only requires greenhouse treatment.

Rhizome creeping. Fronds from 2 feet to 3 feet long, standing in a crown, and of a thin, membranous texture, lanceolate in outline, and pinnate. Pinnae linear-lanceolate, slightly hairy beneath, and sprinkled with minute resinous particles. Sori situated close to the margins.

N. NOVABORACENSE.—Another interesting greenhouse species found abundantly in moist thickets and wet, grassy places in North America, principally from New Brunswick and Canada to Virginia, also in Ohio, Kentucky, and North Carolina. It is peculiarly distinct on account of the very slender and underground creeping rhizome, which always keeps several inches in advance of the developed fronds, and the youngest portion of which is singularly downy. Another peculiarity of this species lies in the singular arrangement which exists as regards the production of fronds. The stalks which are to bear those of the coming year form little stems near the growing extremity of the rootstock; whereas the stalks which support the fronds of the present season, on the contrary, stand close together and at some considerable distance from the end of the rhizome. There exists also a variety which differs from the above species only in the sweet and agreeable odour emitted by its slightly more rigid and narrower fronds. A few plants of it dried in the open air will perfume a room deliciously for a long time. This latter variety is generally imported from Essex County, New York.

Rootstock creeping, elongated, and cord-like. Stalks very slender, about one-third the length of the fronds, and sparingly chafy at first. Fronds 18 inches to 24 inches long, minutely ciliate, and lanceolate, with an acuminate apex and a gradually narrowed base, and pinnate. Pinnae sessile, lanceolate. Sori minute and situated near the margin.

PELLEA.

Flat-tined forks.—I find these to be preferable to those with round tines for many purposes, especially for lifting Potatoes and other root crops, as they are not so liable to prick the tubers as the sharp points of the ordinary steel digging fork. Their dimensions are as follows: Handle, 3 feet, with a light iron hand-hold; blades or tines, four in number, 10 inches long, three quarters of

an inch wide, and $1\frac{1}{2}$ inches between the blades. A fork of this kind is one of the lightest and handiest tools possible, and for light soils preferable to the ordinary form through which the soil when dry runs freely, but these flat-tined ones act as a safe medium between the fork and the spade. Those who may not have yet tried them will find them most useful. Employers seldom consider how wasteful of manual labour it is to have tools heavier than is absolutely necessary. It is impossible for a man to get over as much work with a heavy tool as he could with a light one. Therefore, to have the best of its kind is the most economical and satisfactory for all concerned in the long run.—J. G., *Hants*.

PERMANGANATE OF POTASH AS A PLANT FOOD.

I HAD been using a solution of this for some time as a deodoriser and disinfectant, and as such recommended it to a friend. For convenience sake he kept the liquid in an old watering can in the potting shed, near to which was growing a houseful of *Pelargoniums* in pots. It happened one day that a very young practitioner watered the plants on one side of the house with it, dire results being of course anticipated. Such was not the case, however, but quite the reverse, for the dosed plants showed increased instead of diminished vigour. On this being named to me, I at once, as suggested, commenced a series of experiments, using an unvarying strength of as many crystals of permanganate as covered a sixpenny-piece to a gallon of water for watering the soil with, but for overhead syringing using double the quantity of water. Rare Ferns in a Wardian case, 4 feet by 2 feet, have been syringed once a week for some time with this, and are to all but myself a mystery of luxuriance. From *Ficus* to *Fuchsias*, *Aspidistras* to *Adiantums*, tender Grasses, seedlings in pans, and Roses in pots, all without exception seem to derive much benefit from its administration. In order to ascertain its fatal strength, I planted two plants of *Tropæolum aduncum*, one in sand saturated with a strong solution repeatedly passed through it, the other in the liquid itself, covering the surface with cork to keep the roots in and light out. Both plants are alive and vigorous after two months.

Both manganese and potash, the components of permanganate of potash, are essential fixed elements in the structure of plants. Manganese occurs in small quantities, and although its beneficial properties have not yet been definitely ascertained, it is doubtless taken up by the rootlets in solution with other matters. Of the absolute necessity of potash for plant food there is not a shadow of doubt. In short, it is essential to the life of a plant, and there seems to be no end to its power of combining with other substances, in most cases rendering matters solvent and assimilable which without its aid would have remained useless. The liquid permanganate of potash certainly looks a very risky thing to water plants with, but it is not so, for *Adiantums* dipped overhead in it gave no unfavourable result. Poured through a pot filled with pure sand, it filters through as pure colourless water of beautiful softness. For flowers in vases it is evidently good; the water does not require changing or become offensive, and the plants preserve an unusual freshness and vigour. I have used it for some time in a glass button-hole holder, and the flower-stalks seized and absorbed the colouring matter in about an hour. This was especially the case with yellow flowers; the flowers in it seem to last almost too long, a week's journey with the same button hole being rather more than the most constant lover of flowers would like. For gardeners, a tin box about the size of a vesta box of perm. of potash should be a *vade mecum*, as cultivated plants contain more potash than wild ones; it is thus always handy for putting a pinch into a watering-can. I ought not to omit naming that overhead watering with this liquid is disastrous to our common enemy, the green fly. It is both cheap and useful; a little goes a long way; an ounce of it, costing 3d. or 4d., about fills

an egg-cup, and, as I before stated, four gallons of fertiliser can be made with as much as could be held on a sixpenny-piece. Its other well-tried properties as a deodoriser and disinfectant are not so well known as they deserve to be; an objectionable drain or manure heap is instantly set right by a bucketful of solution. I would advise your readers not to be satisfied with my particular proportion of strength, but to make their own experiments, inasmuch as soils vary to such a degree, that what would be perfection of strength on one soil may not be so in another. Any way successes will be many, and failures few, if any.

Horsforth, near Leeds.

R. A. H. G.

CARNATIONS AND PICOTEES.

THOUGH generations of florists have striven to mould the Carnation and Picotee according to a set model or standard of their own, they have as

in the way of size and colour, but in most cases they have not improved the constitution of the races operated on, examples of which may be seen in what are called the show Carnations and show Pelargoniums. Every flower that the florists have taken in hand has been improved in some way or other, and we have only to look at such modern races of popular flowers as tuberous Begonias to see the wide strides that can be made in this direction in a comparatively short time when specialists devote their attention to particular objects. The chief fault with which florists can be charged is adhering to too formal a standard, symmetrical shape now-a-days not being regarded as an essential element of true flower beauty. After all, the great flower-loving public is the best judge in such matters, and its opinion is decidedly averse to rigid symmetry in outline, which is synonymous with formality. Florists, we are, however, pleased to observe, are now making concessions as regards

This annual is one of the most useful plants for cutting we have, and it should be grown in every garden where cut flowers are in request, supplementing the autumn sowings by others at intervals from the middle of March to the end of May.—*J. C., Byfleet.*

TREES AND SHRUBS.

Carpenteria californica.—This beautiful Californian shrub was exhibited at the recent fortnightly meeting of the National Horticultural Society of France on the 26th of June last in Paris, by M. Robert Lavallée, in the form of sprays of bloom cut from a bush growing in the rich arboretum at the Château de Segrez, collected by his father, the recently deceased and much lamented Alphonse Lavallée, president of the society. This fine shrub is said to have proved



The florist's ideal Picotee. Type of cut common in garden books and periodicals up to quite recent times; an exact copy.



Picotee as it is. Drawn last week in a nursery in London.

yet failed, happily, to produce varieties of either of these flowers that could be termed counterparts of their ideal representations, such as those which, until recently, have been set forth as model Carnations and Picotees in books on florists' flowers. The annexed illustration is an exact copy of a Picotee, such as was common in books on floriculture some thirty or forty years ago, and the ideal of what florists consider a Picotee should be, but somehow the flower refuses to allow itself to be so dealt with. As a contrast to the florist's ideal flower, we give an illustration of an average Picotee, such as may be picked from a bed before it has been tweezered and otherwise subjected to the cunning manipulations which exhibitors of florists' flowers consider indispensable in a model show bloom. Florists, however, deserve credit for what they have done with regard to the improvement of various races of popular garden flowers. They have given us infinite variety both

their conventional rules. At the last Carnation show we noticed that the absurd circular paper collars put round Carnation flowers on plants shown in pots were suppressed—a great gain. We therefore do not despair of seeing the abolition of the collars to blooms shown in trays, and in time other improvements equally desirable.

Self-sown Olarkia.—In order to thoroughly appreciate this useful annual it should be sown about the beginning of August where it is to flower. Leave about three plants in a patch, with a space of 1 foot between them, and in early summer you will have something really worth looking at. The Clarkia is naturally of a leafy, somewhat compact, much-branched habit, and when the plants are about a foot high they should have some strong spraye twig inserted about them, so as to catch the main shoots, or they are apt to be blown about and broken off by the wind.

hardy at Segrez, and is now blooming there presumably for the first time in Europe. The flowers are said by the *Revue Horticole* (in which a coloured portrait of this shrub will shortly be given) to be pure white, but irregular in form, some having four, some five, and some six petals. It is closely allied to the family of Philadelphus.—*W. E. G.*

The Poison Ivy or Poison Oak.—Under both the English names just given, *Rhus Toxicodendron* is widely known through the Northern United States. It is a deciduous shrub, which is admirably adapted for forming a summer covering to unsightly buildings, &c., and perhaps is seen to greatest advantage when allowed to climb at will over rocks or old trees. I remember seeing it some years ago in a neglected old shrubbery, where it had taken possession of some old Spruce Firs, and the contrast afforded by the autumnal tints of its large, handsome foliage was very striking.

The novel effect, accidentally attained, was certainly one not likely to be forgotten by anyone with any particular leaning for hardy shrubs.—G. N.

Earthworms as tree planters.—As squirrels, burying Acorns and Nuts in the autumn, have planted, says *Nature*, many an Oak forest and Hazel grove, so it is probable that the earthworms plant many of the Ash and Sycamore trees that we see perched in out-of-the-way corners, where it is difficult to explain how the blown seed can have got covered by mould enough to allow it to germinate. If an overhanging tree drops the seed, or the wind carries it anywhere near the worm's feeding-ground, it is dragged in and planted in leaf-mould, and kept moist till spring time. At this time of the year we see clusters of Sycamore seedlings growing up together out of the little worm-hills into which they had been dragged heavy end first.

NOTES FROM WOODPLUMPTON.

WHERE is that? the majority of the readers of THE GARDEN will probably ask. Well, Woodplumpton is 5 miles from Preston, and a few evenings ago I had an unexpected treat there, afforded by an inspection of a varied and interesting collection of herbaceous plants, the property of Mr. T. Miller, a name well known to the majority of horticulturists in this part of the country. Mr. Miller has had his fancies, and in times past they were in favour of florists' flowers, but circumstances forced him to relinquish the culture of all plants that required great attention or annual propagation. Nothing gave him more trouble than Gladioli, to which for some time he clung with tenacity, but at last the disease compelled him to abandon them. The last £10 worth failed to survive the first year. He has now the whole of his garden filled with hardy herbaceous plants, except a space near the dwelling, which is devoted to a selection of show Gooseberries. The oldest tree is about sixteen years, and its produce as well as that of the others has frequently received first prizes, no mean honour in a class in which there are often seventeen prizes.

THE GARDEN, which is one of the most informal, has a slight declivity to the south, and is protected on the north by an orchard. Beyond these he has no other natural advantages. Good drainage Mr. Miller maintains is of the utmost importance for the most delicate plants, and he declares that he has lost more of such plants in mild, wet winters than in those that are severe. To provide for these plants and to break the fall of the ground he has banked up the soil on one side of the walk with limestone boulders at various points so as to form plateaux. Planted near the inner side of the stones, dwarf Phloxes and other delicate plants thrive amazingly and hide the stones in the most natural manner. I have never seen a better sample of *Saponaria ocymoides* than that which grew here. In some instances the natural soil has been taken out and replaced by a few brickbats and a soil likely to suit the individual plant. The first class of plants to arrest attention at the time of my visit were the *Delphiniums*, some of which were 8 feet high and bushy in proportion. These formed a row on the northern side, which, as already stated, is bounded by an orchard which formed a background. The first *Delphinium* I came to was a seedling with a distinct white eye and deep blue petals of extra large size—a striking variety. Mr. Miller informed me that he raised a white one a few years ago, but it succumbed the following winter after flowering. Some *Lilies* of the *L. tigrinum* class were 5 feet high and well flowered; *L. candidum* was correspondingly vigorous; *L. Martagon* had forty-six flowers on a stem and *Humboldtii* seventeen. Fine breadths of *Potentillas* made an excellent show, and the *Pyrethrums*, which have a bed to themselves, showed, by their stout headless flower-stems that they must have been very fine. Nothing astonished me more than some thriving patches of *Brodiaea congesta* and its variety *alba*, as I had regarded these as rather tender; and clumps of *Alstroemerias*, named and seedlings, were equally extraordi-

nary. The *Geranium* family was represented by eight distinct clumps, and *Campanulas* by about a dozen, and *Veronicas* by about half that number. Amongst *Michaelmas Daisies*, *carniolica* and *Fortunei* were finely in flower; so were *Galegas* of different sorts. *Iris anglica* was at its best, but the whole of the Spanish kinds were over. *Coronilla varia*, a charming plant, seemed likely to make a show for two or three months. I am not a great traveller, but I have visited a few gardens during the past five years, and I have not seen *Gypsophila paniculata* so good as I saw it here except one which I had under my own care some six years ago. Everyone who has any table decorations to do should cultivate this easily-grown plant. No exotic of my acquaintance can surpass it in gracefulness. *Spiraea (Astilbe) aurea* has no rival as a border plant, or for cutting for drawing-room embellishment (leaves as well as flowers), or for furnishing the conservatory in early spring, and at Woodplumpton the colouring of the foliage was remarkably fine. In proximity to this was *Spiraea palmata*, bearing multitudes of deep crimson plumes. *Triteleia laxa* and *Lychnis Zamae* were strangers to me. The former has purple umbels, and the latter heads of white and crimson flowers. *L. chalcidonica* and others were also nicely in flower. *Phlox Her Majesty* will prove a boon to anyone in search of a white flower at this time of the year. Mr. Miller confesses to having lost a number of plants through overlooking their individual wants in the way of prepared compost and increased drainage, as well as elevating those requiring it. A source of mischief common to many, he contends, is the haste made to cut them down as soon as they begin to look shabby in autumn. He maintains that the hollow stems left convey water into their centres, as well as form harbours for slugs, which lodge in them and emerge in spring when growth commences. At first he fortified his plants with the usual belt of lime and soot; but what was the use of these when the enemy was within the fortress? The plan adopted now is to bend over the taller stems about half-way from the top, so that they are really in some instances converted into protectors from frost. Those too short to be thus treated are left untouched till they commence to grow in spring.

FRUIT CULTURE IN POTS.—Seeing a number of extra large pats standing in a row as if ready to receive their occupants, I inquired what was going to be done with them. Mr. Miller said he had been tempted, after reading the reported ease with which a long succession of fruit could be produced from pot plants, to commence their culture, but he either did not observe, or the information was not supplied, that the trees required water three times a day in very hot weather, or the fruit dropped, and as his duties at times called him from home from morning till night, he had on that account to abandon that system of culture and sacrifice the bountiful harvest which others are said to reap from that source. I think, however, that he has done wisely; he has planted the trees in the house in which they stood, and well they looked, but almost barren. So I estimate he will next year have twenty fruit for every one he has now. W. P. R.

Hyacinthus candicans—This is now in perfection in gardens on the south coast, its spikes of drooping bells reaching from 4 feet to 5 feet high, and carrying from twenty to thirty blooms each, contrasting well with the early varieties of *Gladioli*. We plant this *Hyacinth* out along with *Lilies* between rows of bush fruits, and, beyond keeping the soil clean, it receives no attention whatever. We grow it to supply cut bloom, and I may mention that as the flowers open in succession up the spike the most economical plan is to pick them off singly and wire them. If planted out of 6-inch pots in clumps of three, I find that they lift with a good ball of earth, and if dropped into 8 inch pots make fine specimens for the conservatory, where, with but little care, they may be had in bloom for several weeks in succession.—

JAMES GROOM, Gosport.

GARDEN FLORA.

PLATE 451.

SENECIO MACROGLOSSUS.*

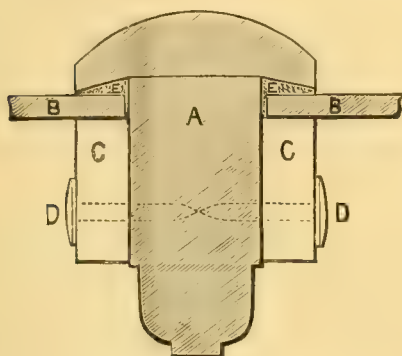
ONLY a very few of the vast number of species of *Senecio* are at all worthy of cultivation as ornamental plants, and of this few the climbing species represented in the accompanying plate is perhaps the most attractive. *S. pulcher*, *S. speciosus*, *S. macrophyllus*, *S. Ghiesbrihti*, and *S. elegans*, with perhaps a few others, are plants of more or less value in a garden sense, owing either to fine leaf characters or to the beauty of their yellow, purple, or white flowers. *S. macroglossus* is, however, exceptionally interesting from the peculiarly close resemblance of its foliage and the habit of the plant generally to common Ivy, whilst in its large pale yellow, graceful flowers it possesses a beauty to which none or at most few of its brethren can lay any claim. Seeing that the introduction into our gardens of this beautiful *Senecio* occurred nearly ten years ago, it is surprising how rarely one finds it outside botanical gardens in this country, though on the Continent we are told it is commonly met with, and is not unfrequently seen gracing the windows and trellises of dwelling houses in various parts of France. In Nice, Mentone, and other favoured districts along the south coast of that country *S. macroglossus* and its near relation, *S. mikanioides*, are favourites as trellis plants, and, so far as their requirements are concerned, there is no reason why both species should not be as extensively employed in this country for the same purpose. For draping pillars or rafters, covering trellises round windows, for drooping over the edges of large vases, and even as a summer plant for the wild garden, and especially for clothing old tree trunks, &c., *S. macroglossus* is in every way well adapted. At the Cape of Good Hope, the native home of this plant, it is generally found clothing the trunks of trees to a great height, the glossy dark green of its Ivy-like foliage forming a thick drapery, through which the large yellow star-like flowers peep in great profusion. The growth of the stems is very rapid, often from 12 feet to 20 feet in a single season, and as the flowers are always freely produced, it will be seen in what a number of ways in the embellishment of our gardens this plant might be employed. A fine specimen of this *Senecio* may be seen on one of the rafters in the succulent house at Kew, where it has been an object of much interest ever since its introduction. From November last year up to the present time this plant has not been without a large number of flowers, the winter months being the time during which it makes its greatest floral display. This Kew plant is growing in the cool end of the house, immediately over the heads of the *Agaves*, *Crassulas*, *Sempervivums*, and similar cool house plants. Its roots are planted in a mixture of loam and leaf-mould, and a liberal supply of water is given, both at the root and overhead, all the year round. Cuttings of it strike freely at any time, and it may also be propagated by means of seeds, which it produces in abundance. The flowers of this *Groundsel* are well adapted for room decoration in a cut state; they are of the right shape and colour, and their lasting powers are all that need be desired. *S. mikanioides* (*S. scandens*) has larger leaves and smaller flower-heads, which are arranged in a many-headed corymb. W. W.

* Drawn at Kew, May 1, 1884.



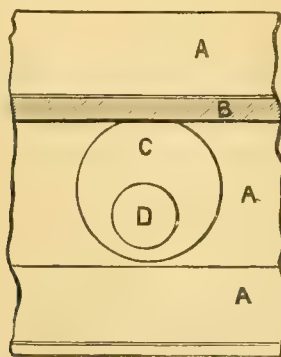
NEW METHOD OF GLAZING.

MR. DENNIS, of Chelmsford, has invented a new method of fixing glass in the roofs of horticultural buildings. A cap of wood or zinc covers the sash bar, and projects on each side about half an inch. The putty is placed under this cap; the sheet of glass is then pressed against it, and is kept in position with cork cams, as shown in the woodcuts, care being taken when nailing them to the bar with small copper nails that they are not pierced through their centre, but at some point a slight distance from it. By turning these round the necessary pressure is obtained to keep the glass close up to the putty strips. Under this system the glazing can be done from the inside. With zinc capping both putty and sash bar are sheltered from the weather, and thus the house is preserved from decay longer than it otherwise would be. The sash or roof bars may be of iron,



A, Sash Bar; B, Glass; C, Cork Cam; D, Copper Nail or Pin; E, Putty.

and may be fitted with a cap of copper or of zinc, and putty may be used as before or dispensed with, and the glass be kept in position by metallic cams instead of cork. Under the glass, metal guttering (zinc or copper) is fixed to the bars, in short overlapping lengths, for the purpose of catching any drip that may occur from rain being driven under the capping by wind. The difficulty



hitherto existing in putty glazing, that of requiring frequent renewal (the result of exposure), is in this system avoided, and roofs of horticultural buildings can be glazed under this system at the same cost as ordinary putty glazing and more rapidly.

Anthracite coal (p. 63).—Our experience with this and gas-coke is that both may be used in a saddle boiler furnace; we have tried both, and our verdict is in favour of coke. Anthracite is more difficult to kindle and to maintain a slow fire; consequently, not so economical at this time of year; but if a larger body of fire was required, as in winter, then anthracite would have some advantages, as it produces a very powerful intense heat. If anthracite and coke could be delivered at the same prices per ton, and taking into consideration

the greater bulk of coke per ton, I am of opinion coke would be found to be cheapest and best.—**WILLIAM CRUMP, Madresfield Court.**

SEASONABLE WORK.

INDOOR PLANTS.

ALLAMANDAS.—Plants of these that have been flowering for some time in pots will be strengthened if an inch or two of rotten manure is put on the surface of the soil; as much may be laid on as will fill the pots to the rim, as the manure being porous will not interfere with the watering, and very shortly it will be full of roots that will be of the greatest assistance to the plants in enabling them to continue blooming. This surface dressing will be found much better than depending alone on the use of manure water.

IXORAS.—Where large specimens of these or other subjects of a similar bushy habit have finished their first blooming they may be cut back freely, reducing them to one-third or so of their size. If plants of this description are allowed to keep on making an unlimited number of growths they will be proportionately weak, and will only bear small flowers, while if well headed in now and the whole of the weak shoots cut away, they will break strongly and push growth that will make a fine display of bloom next spring. By occasionally cutting them in hard in this way the plants may be kept in a satisfactory condition for a length of time, producing flowers more abundantly and quite as large as younger plants. When they have broken well a portion of the old soil, say one-third, may be shaken away and replaced with new material.

ACHIMENES AND GLOXINIAS.—The latest batch of Achimenes started to come into bloom when the earliest are over ought not to be where they will have more warmth than is just sufficient to keep them growing, but they should not be pushed on into flower faster than can be helped; give them sufficient support in the shape of sticks and ties to prevent the shoots hanging about in a loose, untidy manner. Seedling Gloxinias, as well as the last potted bulbs, should likewise be kept as cool as they will bear. If the earliest flowered plants have been kept free from insects, and managed so as to promote healthy growth, they will bloom a second time, and will be much assisted by having liquid manure given every other time they want watering. Gloxinias are not now propagated much by means of cuttings, fine kinds being readily obtained from seed, but where good named sorts are grown, or any extraordinarily good formed or well marked seedlings have appeared, it is well to guard against losing them in the winter by raising some young bulbs. The leaves will now be in the right condition for propagating, being well matured. Put three or four together into 6-inch or 7-inch pots filled with leaf-mould and fine peat, two parts of the latter to one of the former, with a fourth part of sand, inserting the leaves round the edges of the pots. By this means much better bulbs will be secured than by cutting the mid-rib of the leaf and placing it on the surface of the pot. These leaf-cuttings must not be confined over much, or they will be liable to rot. It may be well to remark that the more perfect and well matured the leaves are the better, as the longer they remain green and fresh the better bulbs they will make.

STREPTOCARPUS BIFLORUS AND S. SAUNDERSI.—These are most useful, long-blooming plants, and should be given every encouragement, letting them, if possible, have a position on a front stage close to the glass, or on a shelf overhead if there is one. If located in a situation of this kind they should be taken down and syringed frequently, for if this is not done they are liable to be attacked by thrips. Their flowers, differing as they do in form as well as in colour from those of the generality of other plants, are extremely serviceable in a cut state.

EUPHORBIA JACQUINIEFLORA.—Attend to stopping the shoots of this as needed. The amount of stopping advisable will be regulated by the

greater or less strength of the plants to be operated on; if late and weak, removing too much of the shoots will only weaken them still further, but where strong, they should be fairly pinched back or bent down. Where this Euphorbia is planted out and employed to cover a back wall, it will, if strong, be an advantage to stop all the shoots, as by so doing there will be a much greater quantity available for cutting.

FRUIT.

PEACHES.—Should we have a change to dry weather one of the most important matters in the management of late Peaches under glass will be the liberal application of water to the roots and foliage. With every leaf and branch spread out and trained within 2 feet of the glass a mere surface watering is of very little use to inside borders at any time, and when the heavy strain of a full crop of fruit is in force a watering that does not reach the drainage is misleading, and frequently induces the premature ripening of the fruit before it has completed the last swelling. To avoid this, let all inside borders be heavily mulched and watered until the latter finds its way into the drains. Syringe copiously every fine morning and again about four o'clock in the afternoon, when the house may be closed for two hours to swell the fruit. Elevate all the Peaches that can be got up by placing short pieces of lath under them and across the wires of the trellis. Give night air much or little according to the intended period of ripening, and, if portable, draw the lights quite off for a few hours on fine settled days to infuse colour and to give the fine flavour which Peaches grown in cold or warm houses never attain. When elevating the fruit make a point of shortening back every shoot that will be taken out after the crop is gathered, for the two-fold purpose of increasing the size and letting in light and air.

SUCCESSION HOUSES.—As these are cleared of fruit the first effort will be copious washing to cleanse the foliage, and watering to set the roots and laterals in action. Then will follow the annual cutting away of all the shoots which can be dispensed with to insure the proper ripening of the trees. If they are aged and show signs of weakness, fresh mulching and stimulating liquid may be advantageously applied, but vigorous young trees will do well with plenty of pure water. The weather up to the present time has not been sufficiently warm and settled to admit of stripping the early house; but in the event of a change the lights may be taken off and properly repaired and painted under cover, when the material used will last much longer than it would do if applied when the houses are at work and the wood is more or less charged with moisture.

MELONS.—Where efficiently heated pits or houses are used for winter Cucumbers, the last batch of Melon plants should be put out before the end of this month. If some free, quick turning-in kind, like Easton Castle or Improved Victory of Bath, is used, the crop will be ripe by the middle of October, which is quite late enough to expect really good-flavoured fruit and a very good time for putting out strong plants of Telegraph Cucumber. Unless the weather continues very bad no fire-heat will be needed before the female blossoms begin to open, but it will be necessary to plunge the pots in a brisk heat of 80° to 90° from fermenting leaves or tan, and to place them within the influence of the bottom-heat pipes, as they will be indispensable when the fruit is setting and ripening. If very late fruit is wanted, a few more seeds may be sown in small pots and shifted into the fruiting size as soon as they come into rough leaf. They will then grow away freely without a check and will set plenty of fruit on the first laterals. If 12-inch pots are used, allow each plant to carry a pair of evenly set fruit. Top-dress when they begin to swell and feed at every watering. Discontinue feeding in houses in which the fruit is ready to change for ripening, and reduce atmospheric moisture, but guard against producing a check by allowing the foliage to flag through the want of

pure water. Keep the plants thoroughly under command in pits and frames. Train the leading shoots towards the extremities, pinch out the points when 1 foot from the sides, thin out the laterals, and fertilise every flower as it opens. Do not be in a hurry to stop the laterals, as a sudden check may throw the fruit; when quite safe remove every bit of useless spray. Feed well and water overhead with water at a temperature of 85° to 90° about 3 p.m. and shut up for the day. Cover up at night and give a little air to let out steam, as linings must not be neglected.

STAWBERRIES.—Young plants that have been recently shifted from small 3-inch into fruiting pots may be removed from partial shade to a light, open spot, free from worms and within easy reach of water, of which they will take liberal supplies until the time arrives for storing them away for the winter. In placing the early kinds, which generally occupy very small pots, the latter may be made to shade each other from the direct rays of the sun until the foliage requires more room, when every alternate plant may be taken out, or, better still, the whole block may be turned over and rearranged to prevent them from rooting into the bed. Up to the present time the weather has been more favourable to the rapid production of runners than the formation of good ripe crowns; so much so, that a thousand 7-inch pots filled and placed on a nursery bed in this garden are now half filled with roots and occupying their summer quarters, never having been watered with the hand, but we are now hoping for a decided change, otherwise early forcing will be far from satisfactory. Should the weather still continue wet and unfavourable, all the plants should have full exposure to light and air by being placed in rows on planks, platforms, or dwarf walls, as it is in every way better to have a few well-ripened plants than to swell expenses by wintering a greater number than can be properly grown and tended through the summer. When the potting of the forcing plants is brought to a close, provision must be made for another year by planting out the surplus runners before they begin to suffer from confinement in the small pots in which they have been layered. In the selection of a site the first consideration should be light and air, as plants which are shaded and drawn cannot be expected to produce good runners. Next comes the soil, which should be well prepared by the use of manure and deep trenching, and if a little new heavy calcareous soil can be placed round the ball of each plant, the labour will not be thrown away. If, in addition to the foregoing conditions, a situation near water can be selected, its importance should not be over-looked; but it will be better to incur expense in carrying water than to choose an unsuitable site, as a robust stock cannot be raised from weakly parents. Growers who have not been in the habit of exchanging runners with distant friends and neighbours will do well to try the experiment.

CUCUMBERS.—Where the Cucumber house proper is devoted to the growth of Melons in summer, the raising of young plants must be regulated by the time at which it is likely to be ready for their reception. A manure pit or frame with fermenting material for giving bottom heat is the most suitable structure for raising and growing the plants in, as they can be kept near the glass until they are large enough for shifting into the fruiting pots. Immediately after the Melons are removed, clear away all the old soil and plunging material, thoroughly cleanse the walls, wash the glass, and paint the woodwork if necessary; then fill the pit to the usual level with fresh fermenting leaves, plunge the fruiting pots and introduce the compost, but defer planting until the heat of the bed has subsided to 90° and the soil is thoroughly warmed through. If due attention is given to early closing with solar heat and moisture, and a sweet bottom heat is kept up, the firing of houses now in full bearing may be discontinued. Dress the plants three times a week, and avoid over-crowding by stopping at the first joint beyond the fruit and by the removal of a few of the old leaves and vines as they can be taken away without producing

a check. Add fresh turf to the hills little and often, feed copiously with warm diluted liquid, draw the lights off occasionally when warm rain is falling, syringe well, and shut up not later than three o'clock on fine afternoons.

FRAMES.—Renovate the linings back and front alternately, and cover well with dry mats. Keep the vines and foliage regularly thinned, stop close, and guard against over-cropping. Follow up the system of cutting away all the fruit, old leaves, and vines, as the plants which have been longest in bearing show signs of failing in the production of fine straight fruit. Peg the young growths down into the hills, pack with pieces of fresh turf and keep close and moist until fresh roots are ormed.

FLOWER GARDEN.

MULCHING.—For several years past sundry small plants in the flower garden failed to grow as swiftly as we wished; notably so *Alternantheras*, *Coleus*, and other tender kinds, and also some hardy sorts, *Sedum acre* elegans being among the number; and, believing them to be dry, frequent waterings were had recourse to, but with indifferent results. Last year as soon as planted some of the before-named plants were mulched with Cocoa fibre, and seldom watered, and they did remarkably well. This year all have had this mulching, and have not been watered more than half a dozen times, and yet the growth is perfect.

CLEARING OFF SEED-PODS.—It is an old saying, and a true one, "that each season of the year brings abundance of work." At present attention must be paid to picking off the seed-pods from the best varieties of *Rhododendrons* and *Azaleas*, more especially from those that must present a dressy appearance. If the fullest amount of growth be desired, remove the pods at once, and do not fail to examine the base of the plants to destroy the stock shoots, scores of good varieties of *Rhododendrons* being annually ruined by neglect of this simple precaution. Plants that are encroaching on walks, and that must be cut back, ought not to be clipped with shears, but should be "knifed" in, that the inner shoots may be left intact. In large woodland clumps much harm is sometimes done by allowing the plants to be overrun with Bracken; a rip-hook is the handiest implement with which to clear them.

BEDDING VIOLAS.—The notion that these will not do well in the south is a mistaken one; of course certain kinds do better than others. The cornuta section always does well; Blue Bell never fails, and this last has now got a formidable rival in True Blue; it does not grow so compactly, but with a little additional pegging it is more effective than Blue Bell; being both a better shaped flower and deeper self-blue, it is likely to become a favourite. Mrs. Gray, a creamy white variety, is as floriferous as it is possible for any plant to be, and has every other quality to ensure its becoming a favourite. We have it as an undergrowth for pink *Pelargoniums* and dark *Fuchsias*, and the mixture is most pleasing.

CHRYSANTHEMUM SEGETUM.—This, the Corn Marigold of our fields, though common, is very beautiful, and grows anywhere and flowers abundantly. It got too large for the position assigned it, and so we have pegged it down, and it is now branching out in all directions. For large borders that have to be filled quickly with few plants, this should be one of the kinds used. It would make a grand plant for undergrowth to *Ricinus* Gibsoni, its deep yellow flowers contrasting well with the deep brown foliage of the *Ricinus*.

PROPAGATING.

Now is a suitable time for grafting choice Conifers, that is, where stocks are established in pots, and where this mode of propagation is preferred to cuttings. In grafting, smaller pieces can be employed than in the case of cuttings, an advantage where the variety used is scarce; some kinds, too, root with difficulty, while if grafted low when

planted out, the union can be covered with soil and the plant is then equal to being on its own roots. The best stocks are young seedlings, as nearly related to the scion as possible, and they should be potted and plunged out of doors till required. When the stems are about the size of a straw is a very suitable stage at which to perform the operation. For the different kinds of *Biota* the Chinese *Arbor-vitæ* (*B. orientalis*) is used, and the American *Thuja occidentalis* for the different *Thujas*, while with either of them the *Retinosporas* will unite, but the Chinese is the best stock for the majority of them. *Cupressus Lawsoniana* is used for all its allies, and the common Yew for the *Taxaceæ*. The different kinds of *Abies* must be grafted on stocks belonging to the same section; thus those generally employed are *Abies canadensis* for the *Tsuga* group, *A. Douglasi* for that class, and the Norway Spruce (*A. excelsa*) for the others. The common Silver Fir is used for the *Piceas*, and in grafting the various *Pinuses* both stock and scion must belong to the same section, *i.e.*, both should have the same number of leaves in a sheath. Where conifers strike readily from cuttings grafting is not recommended. Moreover, amongst the larger kinds, as a rule, neither grafted nor cutting plants make such fine trees as seedlings, but in the case of those of a bushy habit, when grown up the difference between the two is not noticed.

The stocks should be cleaned, straggling shoots shortened back, and placed in a cold frame till wanted, in order to get the sap in brisk circulation. Side or veneer grafting is that generally preferred, and is performed as follows: Make a slight incision in the stock at a sufficient height from the ground to accommodate the tying material, the incision to penetrate a little deeper than the bark; after that commence about an inch above and make a sloping cut down to the first, the head of the plant not being touched. The scion must be cut in a corresponding slanting manner, so as to fit exactly the place of the piece removed from the stock, and great care should be taken to unite properly the barks of both stock and scion. The scion must be tied in its place carefully, but firmly, for which purpose nothing is better than what is known as grafting cotton, thick, soft, but strong material, as if the bark be injured in the least decay takes place. When finished place the grafted plants in a close frame, one that is thoroughly air-tight being necessary, and shade heavily during sunshine. If kept quite close and the tying has been done securely, no wax or other composition will be required, and the progress of the union may at any time be ascertained. Of course they must be watered when necessary, but it must be done so as to wet only the roots, as if it touches the wounded part the chances of success will be lessened. When a union takes place, air must be given slightly at first, and the head of the stock must be shortened back by degrees till it can be removed entirely, leaving the scion to take its place.

If, as sometimes happens, signs of damping are perceived a short time after grafting, give air for a little time, but only just long enough to dry up some of the moisture. In grafting, the sharpest knife should be used only for removing the strip from the stock and in preparing the scion, as if employed for cutting the cotton in tying it will soon become blunt.

Artificial manures.—There is doubtless much that is true and useful in the article by "J. C. C." on this subject in THE GARDEN of the 12th ult., but it is indefinite, as the words artificial manures may mean such a variety of things. I suppose in this case it is applied to some mixture of more or less value which the writer had used. I believe it is a subject well worth the consideration of gardeners. Most of the market gardeners do, I expect, use these manures, but I fear that many do not know their value. In order to use them properly it is needful to bear in mind that different plants require very varied feeding. Liebig has lime plants and potash plants; the labours of the chemist are further required to

analyse the different herbs, vegetables, and flowers, so that one may know what to supply to each. Phosphatic manures are very useful for most vegetables, also for Grapes and probably other fruits. Potash helps Potatoes, Peas, &c. Both these, as also lime and salt, are generally beneficial when applied with discretion. Asparagus I found to be helped by kainit, which contains potash, salt, &c. Nitrogenous manures, on the other hand, are principally stimulating, and if applied alone would have the dangerous effects alluded to by "J. C. C." Having had some experience both in field and garden, I make these remarks more especially to draw out information as to the opinions of others who also have tried artificial manures.—C. W.

GARDEN DESTROYERS.

THE BEETROOT OR MANGOLD FLY.

(PEGOMYIA BETA)

THIS insect, which is one of the most destructive to our Beetroot and Mangold crops, is comparatively a recent pest. Curtis, in his work on "Farm Insects," published in 1859, mentions it as a new insect to him: "A gentleman at Cranford who is well known for his scientific researches has made me acquainted with a fly whose larvæ mine in the leaves of the Mangold Wurtzel" and it appears then to have been hitherto unknown, as Mr. Curtis says the fly "exceedingly resembles *Anthomyia ceparum*, which is bred from putrescent Onions, but as I cannot imagine they are the same species, I must distinguish them by naming the former, and shall call it, after the Beet or Mangold Wurtzel, *Anthomyia beta*." He then goes on to say, "These insects will seldom cause any loss to the Mangold Wurtzel crops should they even abound to any extent, but whether they would prove injurious to cattle when the leaves are given them as food, I am not prepared to say." Unfortunately, Mr. Curtis's assertion has not been verified, for this insect is unquestionably very injurious to Beet and Mangolds, and has been found attacking Spinach. The damage done by these larvæ or grubs was hardly noticed until 1879; since then it has become very common, and has spread all over England, and has been found as far north as Dumfries. This shows how carefully garden and farm crops should be watched, and notice be taken of every insect doing injury to it, for an insect may at present be far from common and apparently comparatively harmless, but let circumstances favour it and it may become a very abundant and troublesome pest. This grub injures the leaves by mining between their upper and under surfaces, feeding on the parenchyma or intervening substance, leaving nothing but the principal veins and the skins. When leaves are badly attacked in this way the injury to the plants is very considerable, as the leaves cease to be of any service to them; consequently the health of the plant suffers and the proper growth of the roots is prevented. A sufferer from this insect reported that his crop of Mangolds had been retarded three weeks, and that he estimated that it was only one-sixth of what it ought to have been; it turned out, however, eventually better than was expected. The loss in places in Cumberland in 1881 was estimated at from two to ten tons per acre, and in parts of Dumfriesshire and in other places the Mangold crop failed from its attacks.

THERE ARE TWO BROODS OF THIS FLY and its grubs, and probably in favourable weather there is a third, so that it is most desirable to destroy if possible the grubs or chrysalides of the first brood, and so prevent the plants being again attacked. The flies appear in the spring, and lay their eggs in patches on the undersides of the leaves. When the young grubs are hatched they at once eat their way into the leaves, where they remain feeding until full grown; this occurs when the grubs are about a month old. They then become chrysalides, usually leaving the leaves and burying themselves a few inches below the surface of the earth, but sometimes the chrysalides are formed in the leaf. The flies emerge from the chrysalides in about ten or fifteen days.

The second brood of flies lay their eggs in the same manner as the first, and the subsequent transformations are again gone through, and in the case of a third brood yet again. The chrysalides of the last brood remain in the ground all the winter, and probably some of the flies hibernate. In garden cultivation if the leaves of Beet or Spinach are found to be attacked, the best thing to do is to pull them off and burn, or bury them deeply, and not merely throw them on the rubbish heap, for if the grubs be nearly full grown when the leaves begin to wither they will leave them, and bury themselves and become chrysalides as if nothing had happened; or if the attack has only

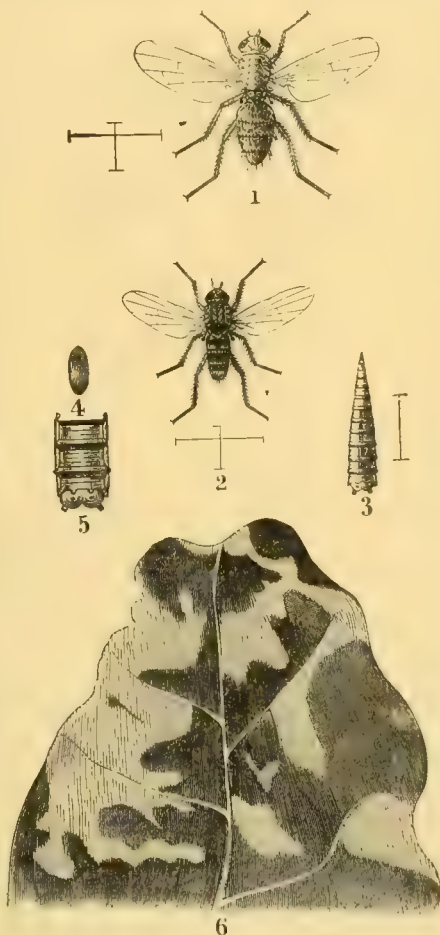


Fig. 1, the Mangold fly, f.-male (magnified); 2, the Mangold fly, male (magnified); 3, the grub (magnified); 4, the chrysalis (natural size); 5, tail of grub (magnified); 6, portion of infested Mangold leaf.

just begun, a pinch at the place where the grub is will be sufficient, and if the leaves be pulled off no particular care need be taken to destroy them, as such young grubs will die as soon as the leaves begin to wither. If young plants are attacked before they are thinned, care should be taken in performing that operation to remove such plants as show signs of being infested. As in most cases of attacks by insects, the plants should be kept in as vigorous growth as possible. Turning over the soil near the plants, when the chrysalides are in the ground, will expose them to the weather and the birds. As regards field crops, the same methods may be used; but as picking off the infested leaves in fields is very expensive work, particular care should be taken in the preparation of the seed bed and in the use of the most suitable manure to render the plants as healthy as possible, as they will then be better able to withstand their foes.

THIS INSECT belongs to the genus *Pegomyia*, in which there are fifteen species, most of which

burrow into the leaves of different plants, causing large blotches or blisters. Many authors have placed this insect in the genus *Anthomyia*, a genus which contains several species whose grubs are injurious to cultivated plants, such as the Onion, the Cabbage, and the so-called root-eating fly whose grubs may be found in the roots of Cabbages and Turnips. *Pegomyia beta*, the Mangold fly, is a very inconspicuous little insect. The males (fig. 2) are rather more than two-tenths of an inch in length, and measure more than four-tenths of an inch across the wings; they are of a dull ashy grey colour, with the antennæ, thighs, and feet black; the shanks are sometimes yellowish. The eyes are dark brown. The thorax and body have darker brownish grey markings, which appear to vary very much according to the direction of the light, sometimes being very distinct and at other times hardly visible. The females (fig. 1) are rather larger than the males, measuring a quarter of an inch in length, and half an inch across the wings; they are of a pale ashy grey colour with black antennæ and feet and yellowish legs. The first pair of thighs are blackish on their upper surfaces; the body has a slight yellowish tinge; in both sexes the thorax is sparingly covered with longish, stiff, black hairs, and the body tolerably thickly with short black hairs; the legs are hairy; the base of the wings is slightly yellowish. The grub (fig. 3) when full grown is about three-eighths of an inch long and is widest at its tail, from which it gradually tapers to its head, which is pointed; its colour is a transparent greenish white. The tail, as in the grubs of many flies, is furnished with several broad projecting points, which may afford some protection to the two spiracles or breathing pores which are placed among them (fig. 5). The chrysalis (fig. 4) is oval and of a dark brown colour; fig. 6 shows a portion of a Mangold leaf mined by these grubs; the blistered portion turns a light brown colour.

G. S. S.

SPECIES OF APHIDES.

IN last week's GARDEN (p. 63) "E. B." asks me "If it has been satisfactorily proved how many distinct forms of aphides there are in this country," and goes on to say: "I have an idea there are only two distinct species, viz., the green and the black aphid." I can most confidently assure "E. B." that all entomologists recognise a large number of different species. Mr. Buckton, the great authority on these insects in this country, in his recent work on British aphides, published by the Ray Society, describes and figures no fewer than 125 species belonging to the family Aphidina, besides those in nearly allied families. If "E. B." would examine the various aphides, from different kinds of plants, under a good microscope, or consult Mr. Buckton's work just alluded to, he would soon be convinced of the untenableness of his two-species theory, as the differences between many species are very apparent. "E. B." also asks, "Is the black aphid of the Bean and Cherry one and the same insect?" and the same question may be asked in reference to the black or dark brown aphid that gives considerable trouble in the Camellia house." The Bean and the Cherry aphides are unquestionably different insects, and have been placed by Mr. Buckton in different genera—the former, which is also known as the black fly, or collier, in the genus *Aphis* (*A. rumicis*); the latter in the genus *Myzus* (*M. cerasi*). The Camellia aphid is quite a different insect from either of those just mentioned. As regards the question also asked, if there are two species of red spider, I may say that the Acari or mites, to which family the red spiders belong, has not hitherto been studied as they should have been, but I think it is very clear that there are several different species which pass under the popular name of red spider; but I was not aware that any attained the size of a pin's head. I imagine the species alluded to as being of that size is a mite of a very different kind, but without seeing it I should be very sorry to suggest to what genus it belonged. It certainly cannot be the progenitor of any of the ordinary forms of red spider. With the mites there are no individuals to represent the workers

of bees and wasps, but there are simply the two sexes. G. S. S.

5218.—**Chrysanthemum leaf grub.**—Nothing disfigures the *Chrysanthemum* more than this troublesome pest, and when once it gets on the plants it is really surprising the havoc that it plays in a very short time if prompt steps are not taken to eradicate it. "G. C." will not find dusting with soot of much use to stamp it out; a far better plan to adopt is to pick all the affected leaves off, lay the plants on their side, and syringe them at night twice a week with a solution of soft soap and water at the rate of two ounces to the gallon. This will keep the pest at bay.—H. PARKER, *East Bank, Sheffield.*

Rose insects (*M. Smith*).—The insects attacking your Roses and other plants are evidently various species of the genus *Psylla*, and are closely allied to the aphides or green flies, and may be destroyed by the same means and many might doubtless be caught by holding under the bushes a large board or sheet of tin newly painted or tarred, and shaking the bush over it. Syringe the trees attacked with 1 lb. of soft soap, 1 lb. flowers of sulphur, dissolved in 8 gallons of water; be sure and wet the undersides of the leaves. The perfect insects will mostly escape, but it will render the leaves distasteful to them, and will kill the larvæ. I could not find any on the Rose shoot forwarded to me, but being active insects they had no doubt escaped.—G. S. S.

FLOWER GARDEN.

ANNUAL SEA LAVENDERS.

THE value of *Statice* for ornamental purposes, both in a fresh and dried state, is well known. The two species about to be mentioned, although only of annual duration, are so easy of cultivation,



Statice echioides.

that they may be treated as hardy annuals. Their seeds should be sown in the border or bed in the open air where they are intended to remain, and the young plants should be thinned out when large enough to handle. *S. echioides*, the rough-leaved Sea Lavender, of which the annexed illustration is a fairly good representation, as a small rockery or border plant is one of the prettiest of the group. It forms rosettes of faultless shaped spatulate leaves, the lower ones tinged with red or reddish brown, reminding one early in summer of the coming tints of autumn; the upper ones are a beautiful dark shiny green, and regularly covered with fine whitish spots, which show the rosette off to advantage. The flower-stem, which rises nearly a foot in height, is much branched and literally covered with bright pink flowers, making on the whole a charming picture. It flowers during the summer months, and is a native of Southern Europe. The only other annual *Statice* worth mentioning along with the above is *S. spicata*, a really fine plant. It has a dense

sturdy habit, and grows from 9 inches to 1 foot in height. The flowers, which are borne on close, densely-set spikes, are pure white or slightly tinged with blue, and contrast charmingly with the large protruding yellow stamens. The spikes are much branched above, giving it almost the appearance of *Spiræa Aruncus*. The leaves are oval, spatulate, and very thin in texture.

D. K.

A GOOD TEXAN ANNUAL.

AMONG annuals lately introduced from Texas, that represented in the annexed illustration—*Lindheimera texana*—stands in the foremost rank as a garden plant, both as regards neat habit and large showy flowers. Seeds of it should be sown



Lindheimera texana.

along with those of other hardy or half-hardy annuals in spring, and that gives the young plants plenty of time in which to fully develop themselves, and though a late flowerer, as are nearly all the American Compositæ, it commences about the end of July, and continues in bloom until cut down by the autumn frosts. It makes a first-class succession plant to early annuals, and sown near them, so as to take their place when over, the flowering season may thus be considerably extended. The leaves, which are produced in tufts at the base of the plant, are oval-shaped and taper to a sharp point; the upper ones, which are opposite on the stem, are broader, and the whole plant is densely covered with stiff white hairs. Although in a wild state it seldom attains more than a foot in height, good cultivation increases its height to 2 feet or 3 feet, the leaves attaining corresponding dimensions. The flowers, which are bright yellow or orange, the latter being the most prevalent colour, measure from 1 inch to 2 inches in diameter, and are borne plentifully on much-branched heads, consisting of from three to six together, backed up by a large leafy involucre. It makes a fine plant for shrubberies or dry banks. The only other species belonging to the genus is *L. mexicana*, a dwarf, cut-leaved plant, with small, inconspicuous flowers—a plant to be avoided.

D. K.

NOTES ON HARDY FLOWERS.

CENTAUREA MACROCEPHALA.—Surely the great-headed Centaurea so seldom seen must be an overlooked plant, and yet it has a fine flower, which is much admired. With a stately stature from about 3 feet to 5 feet, glistening golden yellow flowers of a very durable character, and foliage that keeps fresh and ornamental, it is capable of filling such gaps as require a tall yellow-flowered subject to precede the Sunflowers. The globular and bulky arrangement of scales from 2 inches to 3 inches in diameter, of a rich chestnut-brown colour, also plays no small part as regards the good effect of the bloom, which, seen coming, first in little tufts from the crown, and at last in handsome rounded heads, charmingly fringing over brown scales, affords a distinctness which is most desirable. It grows in ordinary loam, but if well enriched, improved growth is the result.

EVENING OR TWILIGHT FLOWERS might well be planted for their special properties exhibited at that time. I only wish now to mention a little combination of a few dwarf kinds which I noticed the other day. The contiguity of the plants was accidental, but not the less pleasing. Their effect, however, during the day is not great. They consist of *Clematis coccinea*, kept low and compact by pegging; *Cyananthus lobatus*, *Campanula Waldsteiniana*, and *Mountain Avena* (*Dryas octopetala*), scarlet, deep purple, slaty blue, and white respectively. The *Clematis*, by the way, may be termed a closed flower, and in the open garden appears to do finely when its stems are laid on the ground; and who has not been struck with that free flowering Daisy, *Stenactis speciosa*? its mauve or pale blue heads are so effective in the summer twilight. In borders this is both showy and neat; to my mind it is worth half of the autumnal Starworts, and moreover it continues to flower up to the period of their flowering. I have noticed that one plant of this, which somehow has got a place in the walk gutter, where it has been for three years, does much better than plants of it in drier positions.

GENTIANAS.—Quite an interesting series of seedling Gentians has been gathered from around the established plants of *G. affinis*, *septemfida*, *gelida*,* *asclepiadea*, *cruciata*, and one or two others. Such luck has not been mine before, and if one must wait for a year or two to learn what kinds they are which have made themselves so happy, such watching will not be pleasureless. Moreover, it is clearly to be seen already that the seedlings are not of the more common species, such as *cruciata* and *asclepiadea*, the seeds of these being removed as soon as ripe. It may be useful to know that the surface of the soil is not disturbed after the fall of the seed, but merely kept clear of weeds. According to my experience, a little shade from the mid-day sunshine is decidedly favourable to the vegetation of self-sown Gentian seeds, and hardly less so to the development and preservation of their inimitable flowers.

CAMPANULA HIRSUTA is one of the prettier Bellflowers, but it is, perhaps, a little neglected, owing to its lowly habit. It is, however, a distinct species. Its prostrate flower-stems produce a few bells at a time, but they continue to appear for quite two months on the moist parts of rockwork. The most pleasing feature of the flowers is the angled or star-shaped whiteness in the bottom of the rather wide or deeply divided bells, and the flowers always seem to look right at you. Another advantage in this otherwise free grower is that it does not spread immoderately either by root or seed, and slugs do not graze on it, as they do on many of the smooth-leaved sorts.

POTENTILLA LANUGINOSA has flowered with me for the first time, but it did not require one to see its shining golden blossoms to create respect for it, as every bit of it is beautiful; its procumbent and woody branches are of a ruddy hue and thickly beset with white silky hairs or down. The little pinnate leaves with oval leaflets are the same. The clear golden flowers are produced singly, and are nearly an inch across; the petals reflex just a little; and as the centre as well as the outer seed organs are all of a fine yellow colour, the flowers are effective. The height of my young plant is only 15 inches. For comparison sake it may be termed a dwarf sort of *P. fruticosa* with nearly white foliage.

CALANDRINIA UMBELLATA is often found to fail at the end of a season's bloom, and in many gardens it is justly esteemed as of but biennial duration. Here, however, one plant left for the purpose of testing it is now in its third year, flowering grandly. It is in a stiffish loam raised and well drained; aspect, east and south; its form

* The *Gentiana gelida* above referred to is not the true yellow white-flowered, or what is doubtless the true form, but the handsome pale blue kind commonly going by the name, and only a variety of *septemfida*. It would appear though that Chamisso considers *gelida* and *septemfida* but varieties of the same species—viz., the *Gentiana orientalis* of Tournefort. I have to thank Mr. Dod for sending me the description and characters of the Kew specimens. J. WOOD.

is quite arborescent and a foot across. The two past mild winters may have favoured it; other plants a year younger are also in good form and most brilliant during sunshine. I find it to transplant but indifferently; plants of it that have flowered rarely do so again if moved, and according to my experience often die the first winter.

Woodville, Kirkstall, Yorks.

J. WOOD.

HARDY YUCCAS.

FEW hardy plants have a more stately appearance when in flower than Yuccas, one or more species of which may generally be found in the majority of gardens, either as isolated specimens, planted in masses, or associated with rockwork or water. Not being at all particular as regards soil, Yuccas are admirably adapted for any of the above-named positions. The common Adam's Needle (*Y. gloriosa*) and its varieties are probably the hardiest and most robust. Old plants of this species grow to a height of 6 feet or more, and when branched form heads nearly as much in diameter. Yuccas do not flower at any definite age or size; one in a group may produce a panicle this year, while others beside it under precisely similar conditions may not do so for a long time. There is one advantage in this, viz., that those which do not flower one year may be strengthening to flower the next. That the whole energy of the plant is required to sustain a panicle of flowers need not be wondered at, seeing that they often number between 300 and 500. *Yucca recurvifolia* is now, I believe, considered to be a variety of *Y. gloriosa*, and as regards the size and colour of its flowers, which are greenish white, there is but little difference between the two. The panicles in *Y. recurvifolia* are, however, much more branched than in *Y. gloriosa*, and the leaves are very distinct, being gracefully recurved, as the name indicates. This plant is well adapted for decorative purposes, as when established in pots it will bear a larger amount of rough usage than will most subjects of a similar description. In *Y. filamentosa* we have a very distinct plant from either of those already mentioned both in the leaves and colour of the flowers. This species seems to have a greater tendency to flower than most others, and it is dwarfier in habit. Its flowers are of a chaste creamy white colour, and the panicle is branched similar to that of *Y. recurvifolia*, thereby showing the flowers off well individually. The leaves are stiff, and furnished with hair-like filaments on either side. This distinct and beautiful species should be largely grown on account of its dwarf and floriferous habit. Other hardy Yuccas, though attractive as fine-foliaged plants, are seldom seen in flower. Those above mentioned are tolerably plentiful, and where a quantity is grown flower more or less annually. J. G. K.

SOME CHARMING COMBINATIONS.

Now and then the eye, as it wanders round the feast of flowers spread in many a garden, languidly admires or contemptuously criticises the effects produced intentionally or, as it were, by accident, and then at once the eye kindles, the languor is dispelled, and the cry of admiration rises to the lips. So it was with me the other day. Standing before a group of two pots of *Disa grandiflora* nicely in bloom, backed by a big pot of dwarf *Tuberose* with many pearly heads of flower, and surrounded by Ferns and variegated *Panicum*, I thought I had never seen anything so fair, I could almost say so divine. For a sparkling effect in a room or in a greenhouse at this season it is difficult to find anything more cheerful than pots of *Impatiens Sultan* in which this old variegated *Panicum* has been planted to cover the soil and mix with the clear rose flowers. As an out-door effect, and one that is novel, I would recommend the white form of the old and favourite *Everlasting Pea*, *Lathyrus latifolius*, with which a strong plant of *Clematis cocinea* has become entwined. These two plants seem to enjoy the same conditions of drought and heat most thoroughly, and the bright red buds of the *Clematis* contrast most admirably with the pure white of the *Lathyrus*.

On a wall close by long flowering sprays of the sweet-scented Japanese, or, as it is often called Italian, *Honeysuckle* hang down in company with the scarlet trumpet *Honeysuckle*—one giving colour, the other sweetness and creamy tones that lend to each a double charm. This hot season has given great vigour to *Bouvardia Humboldtii corymbiflora* where it could get abundant water, and its large bushes are now a mass of buds and bloom with tall dark masses of *Lobelia fulgens* rising behind—a combination much to my taste.

One garden I know has clumps of lemon-yellow, bright scarlet, and royal purple *Carnations* planted in threes all down a long walk, bordered by *Mignonette*, backed by tall buff *testaceum Lilies*, and clumps of sweet *Pea*. Can anything be sweeter?

In a sheltered nook the dainty plumes of the variegated *Eulalia japonica* are expanding thus early, for last year's stems did not die down, thanks to the clement winter, and so for once we have *Lilium auratum* flowering finely in company with its neighbour *Grass* as at home. *Romneya Coulteri* and the large pale pink bells of *Crinum Powellii* seem to have some affinity in their stateliness and delicate colouring, and this last-named *Crinum* seems both hardy and free flowering as well as beautiful, which is much more than can be said for the old *Crinum capense*, which is at best disappointing. E. H. W.

WALKS AND ROADS.*

The guiding principle in locating the position of roads and walks should be utility. Nature forms no roads or paths; they are the work of men and animals, and would undoubtedly always proceed in straight lines from point to point if obstructions of various kinds did not interfere and cause deviations. Necessity will therefore suggest where and how they should be introduced. So far as regards roads and walks to and from buildings or prominent points of interest, the object of their introduction is sufficiently apparent; but in arranging or laying out pleasure-grounds and lawns it is too common a practice to introduce walks merely to fill up the ground, under the erroneous idea that they form a pleasing variety, or that a walk is in itself a thing of beauty, like a tree, which it is not. A road or walk should always appear to aim for some definite object, or lead as directly as practicable to points of sufficient importance to show their utility.

UNNECESSARY ROADS AND WALKS should be carefully avoided; they are expensive in their construction if properly made, and require to be kept clean and neat. Nothing looks worse than a weedy, neglected road to a house, or walks through pleasure-grounds or gardens. They detract much from the beauty of the surroundings, no matter how intrinsically worthy they may be. An over-supply of roads and walks is always a serious infliction, and their useless introduction is a sure evidence of the work of a novice in landscape gardening. The endeavour to introduce the beauty of curved lines sometimes prompts to a deviation from the more available direct course, and where it can be done without too great a sacrifice of utility, it is not objectionable, but, on the contrary, produces a good effect. But walks or roads should never be turned from their obvious direct course without an apparently sufficient reason. A change of level of ground surface, a tree, or a group of plants, or other similar obstruction, will induce and seemingly demand a change of line. There are many locations where the straight line should be preferred as a matter of taste in design. As a connecting link, or as defining a point between the strictly architectural lines of a building and the irregular surfaces and outlines of natural objects contiguous to it, a perfectly straight walk is in the best taste, and adds greatly to architectural effect; while, on the other hand, a serpentine or frequently curving walk, following, it may be, all the projecting and receding lines of the ground plan of the building, detracts from both solidity and harmony of effect.

* Paper read by Mr. Wm. Saunders before the District of Columbia Horticultural Society.

So also a walk alongside of a straight boundary fence, especially in limited areas where both the fence and walk are visible at the same time, should not curve until it at least defects into a course directed from the boundary line; and yet we may occasionally notice a zig-zag walk under these circumstances, and so decidedly crooked that one steps first on zig and then on zag in the attempt to walk over the pathway. Most people are aware of the beauty of straight walks and avenues of trees when properly placed, and for public parks of the lesser order, such as in small squares in cities, they are both effective and convenient, where curving walks would be the reverse. In this case beauty depends upon harmony rather than upon contrast, and more than either upon utility. When roads or walks are carried over irregular surfaces, the natural turnings and windings necessary to follow an easy grade and keep as closely to the original surface of the ground as possible will usually develop pleasing curves. A little studied attention to this question as to the course of a walk or road will increase the beauty of curving lines by adding to them the factor of utility; deep and expensive cuttings, as well as troublesome embankments, may also be avoided, and easy grades and economical construction be secured.

A SECONDARY ROAD branching from the main road should leave the latter at nearly right angles, and at the same time it should be somewhat narrower than the principal road, so as to avoid confusion or mistake. Otherwise the roads leading to the ice-house, the stable, or other out-buildings may be mistaken for the road to the dwelling. All these roads should be made to appear subordinate. In laying out curving or winding walks or roads it is not always best to follow geometrical rules, or to set the curves out to any regular radius. This plan may occasionally prove perfectly satisfactory on a strictly level surface, but it will have quite an opposite effect where the ground is undulating. The curves, to be pleasing, must be what is known as "eye-sweet," not too sudden or abrupt, and properly blended at their points of junction.

THE MOUTAN PÆONY.

THERE are few more beautiful objects when in flower than well-grown examples of *Moutans*. There are both double and single-flowered varieties; but I think those with double blossoms are the most effective, although there is a greater depth of colour in the flowers of the single kinds. In habit and manner of growth both are about equal, and one can only wonder why they are not oftener met with than they are. They should occupy a position fully exposed to the sun, and then I feel sure they will be admired by everyone. When it is wished to cultivate these plants so as to form them into handsome specimens, they must be planted in a strong, deep soil, sufficiently well drained to prevent any accumulation of water about their roots, and the branches must be allowed plenty of room in which to extend, not that the *Moutan* is an unruly plant; but if it is to be seen under the most advantageous conditions, it must stand clear from everything else, and then its neat, sturdy growth and handsome foliage will have space sufficient to show off to advantage the imposing character natural to it when grown under favourable circumstances. It may be well to state that *Moutans* are not fast-growing subjects. Probably they never exceed 6 feet high unless drawn up by being overcrowded. They are admirable plants isolated on *Grass* or in mixed borders, and their blossoms are wonderfully showy when used in floral decorations if not wanted to last more than one day. For forcing nothing in the way of hardy plants can equal them, provided fair sized plants can be had for the purpose. On several occasions we have had them in the second week in February with more than a score of flowers on a plant, and, as most of the blossoms open at one time, they are strikingly effective. There is a delicacy in the colouring of the flowers when forced that is very pleasing, and certainly uncommon at that season of the year.

Unfortunately, the plants suffer a good deal through being forced, although they do not require much heat to bring them into flower, the blossoms opening freely in a temperature of from 55° to 63°. Even that, however, appears to be too much for the wood buds, for the greater portion of them invariably perish. What effect the same temperature might have on them a month or six weeks later I have not tried; probably, if they were brought on without any forcing, the wood buds might survive and flourish when taken from under glass. It is this loss of buds which injures the plants so much, and from which it takes them three years to recover. To have plants fit for forcing every year, three sets are necessary, in order to give them time between to recoup their strength. When they have been forced into flower, it is necessary to carefully harden them after they are brought from the conservatory and before they are placed again in the open. They should be planted out about the end of May in a good rich soil, there to remain until they are in a condition fit for forcing. J. C. C.

Gentiana gelida.—It appears from a note on p. 64, headed *G. septemfida*, that Mr. Wood, of Kirkstall, has *G. gelida* in cultivation. If he has, a living specimen would be a great boon to the collection of hardy plants at Kew, and help to put an end to the endless confusion which exists in gardens and catalogues between this species and *G. septemfida*. The latter is a variable plant, both in form and colour, but of several hundreds raised from seed and now in flower, all are of some shade of blue, and all have the secondary divisions of the corolla or the scales multifid. In *G. gelida* the flowers are cream coloured and the corolla scales bifid.—C. WOLLEY DOD, *Edge Hall*.

Anagallis Phyllipsi.—This is by far the most beautiful of the Pimpernels which have fallen under my notice, and seems to be practically unknown. It has flowers upwards of an inch in diameter, of very nearly, if not quite as beautiful a blue as that of *Gentiana verna* or *bavaria*, while it is as easy to grow as these are difficult. Seed which can be obtained without difficulty germinates readily, and the resulting plants will, with slight protection, live through the winter, and afford an abundance of cuttings which root in a cool shady spot in a few days, and commence blooming almost before they are struck. It is a little inclined to be straggly in habit, but is in other respects a perfect gem.—G. P.

Iris verna.—A native of the Alleghanies, from Virginia southward, 4 inches to 8 inches high, and with very beautiful violet-blue flowers. It generally grows on dry, partially shaded hill-sides, but it does equally well in the open ground without any shade, and even flowers more profusely there than in its native habitat. It sometimes grows in thick masses in light sandy soil, with the flowers so numerous as to completely hide the foliage. The flowers are very delicate, and last in perfection only a very short time, a few hours at most. This species appears to be uncommon in cultivation, having been confounded with *I. cristata*, which much resembles it in habit.—G.

Clematises are this year blooming grandly, forming when doing well masses of rich colour such as few other hardy flowers are capable of producing. Effective as Clematises are on archways and trellises, that is not the most telling way of employing them. Grown on poles they display themselves better; they may be trained round stout Pea sticks if not required to be more than some 4 feet high. I lately saw some fine specimens on poles about 8 feet high standing on the lawn in front of a large villa, and very handsome they looked, contrasting finely with the general occupants of the garden, the deep rich tints of the purple kinds standing out in bold relief from the green Grass and the more sombre hues of conifers and other evergreens.—J. C. B.

Clematis aromatica.—This is the name adopted by the late M. Alphonse Lavallée in his

"*Clematis à Grandes Fleurs*" for the plant which is well known in English gardens under the name of *C. cœrulea odorata*. Whether this is the really correct name, or whether the species will not prove to be identical with one previously described under other names, is doubtful; this question will be treated by-and-by. Like so many garden plants, particularly shrubs and trees, the native country and origin of this Clematis is unknown. It is not so handsome a plant as the *C. viticella*, but it possesses a great advantage over that species in the delightful fragrance of its dark blue flowers; moreover, it requires different treatment, or at least does best under different conditions, as it is a smaller and less vigorous plant. The best place for it is the stump of an old tree or against an arbour, where it can be allowed to develop without let or hindrance, and can be protected from stronger growing subjects which might interfere too much with a weaker climber than themselves.—N.

Tagetes lucida.—This, one of the few perennial species of this popular genus, has special merit as a garden plant, for, unlike many of its congeners, it has a very agreeable odour. It is a native of Chili, and, like other plants from that sunny clime, notably the *Eccremocarpus scaber*, &c., it resists the cold of our average winters very well, seldom getting killed except in very damp situations. It generally grows about a foot in height, is shrubby in habit, and well clothed with shining oval leaves. The flowers are gathered together in umbels, and though not large individually present a lively appearance throughout the greater portion of the summer. It produces seed freely, or it may be propagated by cuttings in the usual manner. For a groundwork under large sub-tropical plants, few plants will be found to equal *T. lucida*, as when pinched back it forms fine bushy plants.—K.

Giant Michaelmas Daisy.—The Himalayan Aster *diplostephioides*, figured in the *Botanical Magazine* last year, is undoubtedly a grand addition to Michaelmas Daisies. Being found plentifully at an altitude of from 8000 feet to 16,000 feet from Cashmere to Sikkim in moist situations, it will doubtless prove as hardy with us as the more common North American species. The colour of the flowers does not differ materially from that of those with which we are already acquainted, a light purple being the predominant shade, but they are very large, being on an average quite 4 inches in diameter. The plant itself ranges from 1 foot to 2 feet in height, and is neat and bushy in habit, and densely covered with glutinous hairs, which hold fast all intruders. It is easily propagated by division, and as it also ripens seed freely, the time may not be far distant when a clump of it will be found in every garden.—K.

Lythrum Græfferi.—This is a charming plant for trailing on the ground or for planting on the side of a rockery where its slender growths can hang down. It is also well adapted for greenhouse decoration grown so that it can be suspended from the roof. Probably its merits for this purpose are not sufficiently known, or it would be oftener seen, as trailing plants for hanging baskets or brackets in greenhouses are somewhat limited. Cuttings of it strike readily in spring. They are best placed five or six in small pots and set in a propagating frame such as that used for tender bedding plants. When ready for repotting they should be transferred bodily to the pots or baskets in which they are intended to flower. Ordinary 5-inch pots may be used, passing a wire round them under the rim and suspending them, but these have not quite such a neat appearance as others specially made for the purpose. The main growths hang down nearly 2 feet, and lateral growths from the base succeed these. The flowers, which are purplish, are freely produced from the axils of the small, narrow leaves. Being a native of Southern Europe, it is almost or quite hardy. A few plants of it may, however, be kept in a cold frame or house during winter. It has been flowering for some time both in and out of

doors, and is still likely to continue to do so for a considerable period.—J. G. K.

5223.—Plants for shady situations.—In addition to green-leaved Ivies there are the large clouded white and many small-leaved variegated kinds, which, intermixed with the plain-leaved ones, present a varied and pleasing appearance. *Kerria japonica* and *Pyrus japonica* thrive and bloom well in a north aspect; also *Jasminum nudiflorum*. Where the sun comes but little is not a good place for flowering plants generally, but *Violas* and *Pansies*, *Primroses* and *Polyanthuses*, alpine *Auriculas*, *Daffodils*, *Hyacinths*, *Snowdrops*, *Tulips*, *Grape Hyacinths*, *Crocuses*, *Myosotis disitiflora*, *Lilies*, *London Pride*, *Dog's-tooth Violets*, *Primula Sieboldi*, and the common *Columbine* are amongst the best that can be grown in such places. Then if some of the more free-growing hardy Ferns, such as the *Male Fern* and its fine variety *cristata*, the *Lady Fern*, the *Royal Fern*, the *Hart's-tongue*, &c., are grouped or dotted here and there in conjunction with clumps of the golden and silver variegated *Periwinkles*, a tolerably bright and varied appearance will be obtained. In the matter of climbers for a sunny situation there is nothing better than such hardy Clematises as *Jackmanni*, *rubella*, *Lady Bovill*, and *Viticella rubra grandiflora*. Well stir the soil to a depth of 18 inches, adding plenty of good manure. Procure good two-year-old plants and set them out in October. In March prune them back to three pairs of eyes and mulch with rotten manure, and they will make a good growth and flower well the first year.—J. C. B.

NEW CARNATIONS AND PICOTEES.

The exhibitions of the Carnation and Picotee Society are generally looked forward to as offering excellent opportunities for comparing new flowers with old ones, and for noting the progress that has been made in the raising of seedlings during the past twelve months. It requires some patience and a certain amount of quietude to compare the new varieties with the older ones in the same classes; but this has been accomplished.

CARNATIONS.—On the 22nd of July a considerable number of varieties were examined and the following awards were made. There have been so many good varieties added to scarlet bizzarres during the last six years, that it is difficult to obtain anything really distinct and superior to the existing varieties, but Joseph Crossland (*Simonite*), grown and exhibited by Mr. Douglas, was thought to be worthy of a first-class certificate and first prize in its class. It is an early-flowering variety, richly coloured, the flowers nicely flaked with maroon and scarlet on a good white ground. Mr. Dodwell obtained the second prize in this class with a distinct and good variety of his own raising, named H. A. Rolt; it has well formed petals with broad markings of light scarlet and maroon on a good white ground. There were some good, large, well-formed flowers in the crimson bizarre class, and after some discussion the first prize and a first-class certificate were awarded to a seedling of Mr. Dodwell's, named Mrs. Francis Whitbourne. Its flowers are of the largest size, finely formed with well developed outer petals, which are beautifully marked with pinkish red and purple on a good white ground. It was grown and exhibited by Mr. Douglas. *Crimson King* (Dodwell), also exhibited by Mr. Douglas, was awarded a first-class certificate and the second prize in its class. This is a very richly coloured variety, perhaps the darkest yet raised. It is flaked with deep reddish crimson and maroon-purple on a good white ground. Mr. Charles Turner, of Slough, was the only exhibitor of

PICOTEES. He had some very fine flowers in the rose and scarlet-edged class, the whole of them the productions of the Rev. Charles Fellowes. The first prize and a first-class certificate were awarded to *Duchess*, a remarkably fine flower of large size and good form, resembling *Constance Heron*, by the same raiser, but the new variety is better filled up with petals; the white is very pure with a rosy red edge. Maude obtained the first prize

and a first-class certificate in the light-edged class. It may be described as a light rose-edged Mary, the outer petals being beautifully formed with a delicate wire edge of bright rose. Juliet was the only flower exhibited in the purple-edged class for prizes. It belongs to the light-edged section, and is of large size, the petals of a clear white colour, edged with light purple.

Messrs. Veitch are doing some useful work in showing the good effects that can be produced by grouping the self-coloured border varieties of Carnations and Proteas in colours in their Chelsea nursery, and not only so, but the extraordinary vigour of the plants and perfect development of the flowers are not a whit behind those grown in the best country districts. From a large assortment of border flowers they exhibited the following were selected for first-class certificates: viz., Celia, a very charming variety with well formed flowers of a delicate rose-pink colour; John Barnet, deep rose-pink, flowers large, with substantial outer petals and well filled centres; and Mrs. Glen, a very fine primrose-yellow, with broad, well-formed outer petals, the centre full and of good form. Harvester promises to be one of the most popular of border flowers; it is of a buff or apricot colour in the way of Florence, which has nicely fringed petals, while those of Harvester are smooth and well formed. The same firm also obtained a first-class certificate for a very distinct border Pink named Rose Perfection, the flowers of which are self-coloured and of a deep rose tint, quite distinct from any other Pink. It may also be well adapted for forcing. J. D. E.

INFLUENCE OF THE STOCK ON THE SCION.*

DR. STURTEVANT said it seems to be admitted by many of our best botanists and leading pomologists that there is a reciprocal influence between the stock and the scion, but to what extent this influence is exerted, its boundaries, and the conditions under which it acts does not at present appear to be well defined. The influence of bud variations, of cross-fertilisation, and of graft hybrids is not in every case distinguished from the effect of the graft and stock upon each other, and hence a confusion. It, therefore, seems proper to bring together all the asserted cases where the stock has influenced the graft and *vice versa*, in order that the evidence for making up our minds may be more fully under our observation. Dr. Sturtevant then proceeded to read the following instances of the effect of the stock on the scion: Mr. Paul Dudley, F.R.S., who resided at Roxbury in 1726, spoke of a Bergamot Pear tree from which a scion was taken and grafted into a common hedge Pear, but the fruit did not prove so good as the original, and the skin was thicker. In 1850, Mr. A. C. Hubbard, writing from Michigan, said, "A neighbour of mine, who is a very close observer, took scions of the Esopus Spitzenberg Apple and grafted over a tree which had previously been grafted to some other variety. The fruit from this tree far surpasses any other Spitzenberg he raises in flavour." Mr. B. Hathaway, a nurseryman and fruit grower in Michigan, writes, "The result of my experience goes to show that the stock has an influence in determining every characteristic of the fruit. Although not always appreciable, it is often so strikingly manifest as to leave no room for doubt. I have a Northern Spy on Greening, and this tree always gives me my largest specimens, though pale in colour; while two trees close by grafted on Esopus Spitzenberg always give fruit highly coloured, but never so large." He also states that he has ten root-grafted Northern Spy trees on which the fruit is always alike, and forty other Spy trees on large seedling stocks on which the fruit is constantly and markedly varied. Two instances are related by Mr. H. S. Tyler, of Dalton, of Baldwin grafts from the same tree following the characteristics of the trees on which they were grafted

—one a seedling, small, sour, high-coloured Apple, keeping very late; the other sweet. The grafts were so changed that their identity was doubtful, though they were finally decided to be Baldwins. Mr. P. Barry thinks a sweet and sour Apple might be produced by grafting a Greening on a sweet Apple stock, and that a striped Apple might be produced by grafting a red Apple on a green Apple stock. "My garden contains," says Knight, "two Peach trees of the same variety, the Acton Scott, one growing upon its native stock, and the other upon a Plum stock, the soil being similar and the aspect the same. That growing upon the Plum stock affords fruit of a larger size, and its colour where it is exposed to the sun is much more red, but its pulp is more coarse, and its taste and flavour so inferior, that I should be much disposed to deny the identity of the variety if I had not inserted the buds from which both sprang with my own hand." We know, says Mr. W. C. Lodge, that a few of our best native varieties of the Pear when grown upon the Quince are more perfect than upon their own roots.

Downing says: "A slight effect is sometimes produced by the stock on the quality of the fruit. A few sorts of Pears are superior in flavour, but many are also inferior when grafted on the Quince, while they are more gritty on the Thorn. The Greengage, a Plum of great delicacy of flavour, varies considerably upon different stocks; and Apples raised on the Crab and Pears on the Mountain Ash are said to keep longer than when grown on their own roots."

A writer in an English horticultural paper says: "I have lately seen some curious cases of a modification of the character of black Grapes, alike in flavour, size, and colour, by being grafted on the White Syrian and White Nice, notably Mrs. Pince had its bunches and berries both grown out of normal character, and its flavour spoiled by being so treated." A committee of the Southern Californian Horticultural Society reported that the Navel Orange budded on the Citron, Lime, and China Lemon in each case showed marked and distinct characteristics derived from the stocks.

The double scarlet Thorn budded on the Pear in 1866 grew with extreme vigour in 1867, and flowered abundantly in 1868, and bore fruit abundantly, which were not single-seeded, but contained from two to four seeds. The haws had large, open eyes, and were of a flattened shape. The trees from which the buds were taken had flowered previously for several years, but had never produced a haw. After the fruit had ripened, both buds and stock died. Grafts of the same on Pear stocks pushed splendidly in 1868, and formed leaves 8 inches across, bore haws in 1869, though less abundantly, but with seed similar to that of the budded plants, and then died. Paul's Scarlet Thorn, grafted on the Pear, grew luxuriantly, and the individual flowers were very much larger than on the Thorn stock, but of less vivid colour. The excessive vigour of growth of the Thorn on the Pear seems to forbid its long endurance. Grafted on the Quince, the Thorn made nice dwarf plants. Pears grafted on the Hawthorn showed a resemblance to it in form and other points. On this are made the following remarks: "We cannot shut our eyes to the increasing number of cases of alleged graft-hybridisation. Very few of these cases have been submitted so the rigid scrutiny of competent observers; nevertheless, the number of the alleged cases is now so considerable that the necessity for inquiry and direct experiment becomes urgent. So many interests are involved in this question, that it must not be pooh-poohed because it runs counter to general experience and belief. Admitting, for the sake of argument, that some of the recorded cases are what they pretend to be, it must still be granted, that they are quite exceptional, but this very circumstance renders further investigation all the more desirable. In our search after the why and wherefore of the exception we may perchance be able to light upon some of the 'reasons why' for the general rule, itself greatly standing in need of further elucidation." M. Carrière twice inserted grafts of the *Aria vestita* on

Thorn trees growing in pots; and the grafts as they grew produced shoots with bark, buds, leaves, petioles, petals, and flower-stalks, all widely differing from those of the *Aria*. The grafted shoots were also much hardier, and flowered earlier.

Some years ago, says a writer in THE GARDEN, we grafted the Styrian or Keele Hall Beurré Pear on the Citron des Carmes, which is one of our earliest summer Pears, and the result is that the Styrian, thus treated, is about three weeks earlier than the same kind on the ordinary Pear stock, and better flavoured. Mr. Stephen Adams says, "A few years ago I cut off most of the limbs of my Jargonelle and Vicar of Winkfield and grafted both with Clapp's Favourite. They have commenced to bear, and those on the Jargonelle are two or three weeks earlier than those on the Vicar. I have also a Talman's Sweet, a root-graft twenty years planted, that until recently has borne very sparingly, while grafts cut from it and set in top of other trees have borne well and early. Grafting a young twig on an older stock has the effect of making it flower earlier than it would otherwise do. A scion taken from a young tree that has never fruited will be hastened in its growth when grafted on a mature tree, and will bear sooner than it would do if it had been left to itself."

Downing says, "While grafting never effects any alteration in the identity of the variety or species of fruit, still it is not to be denied that the stock does exert certain influences over the habits of the graft. The most important of these are dwarfing, inducing fruitfulness, and adapting the graft to the soil or climate." The double yellow Rose, which, according to Mr. Carpenter, seldom opens its flowers, and will not grow at all in many situations, blossoms abundantly, and grows freely when grafted on the common China Rose. Thoin found that three species of Robinia, which seeded freely on their own roots, and which could be grafted with no great difficulty on another species, when thus grafted were rendered barren. On the other hand, certain species of Sorbus, when grafted on other species, yielded twice as much fruit as when on their own roots. Downing asserts that when a graft is taken from one of these trees (of North American varieties of the Plum and Peach which reproduce themselves truly by seed) and placed upon another stock, this grafted tree is found to lose its singular property of producing the same variety by seed, and becomes like all other worked trees—that is, its seedlings become highly variable. Cabanis (quoted by Sageret) asserts that when certain Pears are grafted on the Quince, their seeds yield more varieties than do the seeds of the same variety of Pear when grafted on the wild Pear. Mr. G. W. Campbell had two Roses, one a light blush, finely formed, but of undecided colour, and the other very dark, but not well formed. These grew near each other. Buds of the light variety were inserted in the dark, which grew and retained all their habits of growth and foliage, as well as the form of the flowers; but the colour, instead of a light and uncertain blush, was a rich, dark crimson, nearly, but not quite as dark as the bloom of the stock. In some instances the stock exerts a marked influence upon the scion, thus showing the co-operative system in use between them. Mr. Josiah Hoopes mentions an instance of a couple of Muscat Vines worked on the Black Hamburg in the same house with a Muscat on its own roots. Those worked on the Hamburg start fully five or six days in advance of the one on its own roots, although they are nearly a fortnight behind the Hamburgs they are worked on. It is a curious fact that there has never been seen any difference in the ripening season, nor any effect on the fruit. Grafting the Pear on the Mountain Ash is practised in Nassau, and is said to retard the blossoming of the trees, and thus to adapt them for a climate where there is danger from spring frosts. A scion of *Passiflora vitifolia* (*Tacsonia Buchananii*) grafted on a stock of the variegated *P. quadrangularis* has subsequently shown variegated leaves. The habit of the plant is sometimes altered by grafting. Thus *Acer eriocarpum* when grafted on the common Sy-

* "Influence of the Stock on the Scion and *vice versa*." By Dr. Sturtevant, in Transactions of the Massachusetts Horticultural Society.

camore attains in Europe double the height which it does when raised from seed. *Cerasus canadensis*, which in a state of nature is a rambling shrub, assumes the habit of an upright shrub when grafted on the common Plum. . . . The common Lilac attains a large size when grafted on the Ash; and *Tecoma radicans*, when grafted on the Catalpa, forms a round head with pendent branches, which are almost without tendrils. Buds of *Bigonia grandiflora*, some of which were taken from a natural plant, others from a specimen of *B. radicans*, were grafted on a plant of the latter species. The first graft was a trailer, its wood brown; the second graft became a shrub, its wood green. Mr. Fairchild in 1721 grafted the Holm or Evergreen Oak (*Quercus ilex*) on the common Oak (*Quercus Robur*) as a stock, the result being that while the leaves of the deciduous stock fell in the autumn as usual, those of the evergreen scion remained just the same as if on their own roots. The stock has no other influence on the graft but that which the soil has on a plant; the latter will not grow in a soil which does not suit it, and the graft will only grow upon plants allied to it.

INFLUENCE OF THE SCION ON THE STOCK.

Henry Cane, in April, 1692, cut off a small plant of the common white Jessamine, not larger than a Tobacco pipe, at two joints above the ground and grafted it with the yellow-striped Jessamine. It took, but grew feebly, and in four or five weeks died, and part of the stock died also, and was cut off. The next year it broke out at the joint below, with several shoots of the striped variety, and also made a strong shoot from the root of the striped variety. He tried the same experiment with several other variegated plants, but did not find any of them to transmute as the Jessamine did. Suppose a plain Jessamine tree with two or three branches from one common stem near the root. Into any one of these branches in August inoculate a bud taken from a yellow striped Jessamine, where it is to abide all winter, and in summer you find here and there some leaves tinged with yellow, even on the branches not inoculated, till by degrees in succeeding years the whole tree, even the very wood of all the tender branches, shall be most beautifully striped and dyed with yellow and green intermixed. It is not material whether you cut off the branch above the inoculation to make the bud itself shoot. Even if the stock is not cut off and the bud does not shoot out, the same effect will be produced; or if the bud lives but two or three months, it will in that time have communicated its virtue to the whole sap, and the tree will become entirely striped. John Bartram, February, 1741, says: "Take a bud from a variegated Jessamine and insert it into a plain Jessamine. Not only will the bud continue its variegation, but will also infect and impregnate the circulating juices, that the branches and leaves above and below the bud will appear variegated." When it is desired to turn a green Jessamine into a variegated one, a single bud of either the silver-leaved or the golden-leaved will communicate its variegation to every part of the plant, even to suckers thrown up by the root. The same result takes place with the variegated Laburnum, even if the bud should die, provided a portion of the bark to which it was attached continues to live. A scion of a golden-leaved Laburnum was budded on a green-leaved Laburnum as a stock. The buds were inserted at 2 feet or 3 feet from the ground, and in the course of a few months not only did portions of the green-leaved stock produce golden-variegated branches below the point of union, but pure golden stolons or suckers were thrown up from the root. Mr. Purser states (believed by Dr. Lindley) that a common Laburnum tree in his garden, into which three grafts of the *Cytisus purpureus* had been inserted, gradually assumed the character of *C. Adami*; but more evidence and copious details would be requisite to make so extraordinary a statement credible. The variegated variety of the *Castanea vesca* had been grafted, according to Burbidge, standard high on an ordinary green-leaved sweet Chestnut stock. The graft took, but from some cause or other

afterwards died off; and subsequently a young shoot, with well marked variegation on its leaves, broke out from near the base of the stem.

Passiflora Raddiana (kermesina) and *P. Impératrice Eugénie* were inarched with the variegated *P. quadrangularis auncubæfolia*. From the branch above the graft branchlets were produced which bore variegated leaves, from which cuttings were taken which perpetuated the two variegated varieties thus produced. About 1722 Mr. Fairchild budded a Passion flower whose leaves were spotted with yellow into a variety with plain leaves, and though the buds did not take, yet after it had been budded a fortnight the yellow spots began to show themselves about 3 feet above the inoculation, and in a little time after that the yellow spots appeared on a shoot which came out of the ground from another part of the plant. During the past season a Mountain Ash upon which was budded a variety with variegated leaves commenced to push forth young shoots from the main body of the tree below the point where the bud was inserted. In every case these had variegated leaves. Now in view of the fact that these adventitious buds were there in advance of the original variegated bud, the presumption is that they were created green, and that their normal condition yielding to the controlling influence of the new branches caused the change to occur by the flow of sap from above.

Three years ago, says Mr. Meehan, a bud of the blood-leaved variety of *Betula alba* was put into a strong stock of *B. alba* var. *populifolia*. After the bud had grown a foot it was accidentally knocked out. Over the place where it grew a bud of cut-leaved Birch was inserted, which, growing, preserved the stock. Last spring, several inches below where the blood-leaved bud was inserted a branch of a blood-leaved colour put forth, showing that the colouring principle existed in the stock ten months after all the foliage had been destroyed. The new bud from the *populifolia* stock is the true European *alba*, showing that more than mere colouring had been transmitted. Mr. William Reid asserted that variegated Willows would transmit their influence to the stock. Mr. Brown, of Perth, observed many years ago, in a Highland glen, an Ash tree with yellow leaves; and buds taken from this tree were inserted into common Ashes, which in consequence were affected, and produced the blotched Breadalbane Ash. Mr. Rivers, on the authority of a trustworthy friend, states that some buds of a golden-variegated Ash, which were inserted into common Ashes, all died except one, but the Ash stocks were affected (a nearly similar account was given by Bradley, in 1724, in his "Treatise on Husbandry," i., 199) and produced both above and below the points of insertion of the plates of bark bearing the dead buds shoots which bore variegated leaves. The variegated *Pittosporum Tobira* was worked on a green-leaved stock of the same species, and though the graft did not take, the contact was sufficient to cause the production of a variegated shoot below the graft. According to De Candolle ("Physiologie Végétale") each separate cellule of the inner bark has the power of preparing its food according to its nature; in proof of which a striking experiment has been tried by grafting rings of bark of different allied species, one above another on the same tree, without allowing any buds to grow upon them. On cutting down and examining this tree, it was found that under each ring of bark was deposited the proper wood of its species, thus clearly proving the power of the bark in preserving its identity even without leaves. Prof. Kirtland, in commenting on this, says: "A graft of the green Newtown Pippin will invariably render the bark of the stock rough and black (the habit of the variety) within three years after its insertion." The gardener who in 1644 in Florence raised the Bizzarria Orange declared that it was a seedling which had been grafted, and after this graft had perished the stock sprouted and produced the Bizzarria. A Potato scion set into a Tomato plant induced the latter to set small tubers in the axils of its leaves, as we see sometimes on the tops of

Potatoes. The grafting of an Artichoke plant into a Sunflower caused the latter to set tubers under ground.

RECIPROCAL INFLUENCE OF THE STOCK AND SCION.

Whatever opinions may have formerly prevailed among orchardists, it is now generally conceded by intelligent cultivators that the stock affects the fruit of the scion in quality, productiveness, and time of bearing, and that the scion increases or retards the growth of the stock, and in some instances imparts its own peculiarities to the root. The graft and the stock do, however, exercise a certain amount of reciprocal influence the one on the other, and in certain cases hybrids or intermediate forms between the two are produced. A variegated plant, whether used as a stock or scion, has the faculty of imparting its variegations to the leaves and buds subsequently produced. A writer in the *Journal de la Société Impériale*, &c., assumes an effect of the stock on the scion, and from it argues the effect of the scion on the stock, "As the scion is modified in its fruit, its leaves, its growth, its vitality, it is quite natural that the stock should be also modified in its constitution by the graft." Gartner quotes two separate accounts of branches of dark and white-fruited Vines which had been united in various ways, such as being split longitudinally and then joined, &c., and these branches produced distinct bunches of Grapes of the two colours, and other bunches with Grapes either striped or of an intermediate and new tint. Even the leaves in one case were variegated. My monstrous Pippin, says Mr. Stephen Adams, was grafted near the ground about thirty-five years ago. It soon began to bear superb fruit, large and fair, but too tart to eat raw. About twenty years ago I sawed off five of the limbs and grafted them with an Apple called Hay Boys. Soon the monstrous Pippin grew milder until it has become a sweet Apple, though the Hay Boys is not so sweet as formerly. The effect of the Quince in dwarfing the Pear and bringing it into bearing is so well known as to require only an allusion, as is also that of other dwarf stocks. Instances of the effect of variegated Abutilons on the stocks on which they were grafted are so numerous and universally admitted, that mere mention of them is sufficient.

Dr. Sturtevant repeated that the influence of the stock and graft on each other should not be confounded with bud variations. There is a variegated Coffee tree in the Department of Agriculture at Washington; if this had followed the grafting, it would have been ascribed to the grafting. Change of form in leaves is common, and also form of tree. He had seen the Beech tree in the form of a column. Graft hybrids are yet rather rare, and consequently we know little concerning them. The immediate effect of pollination, denied by Prof. Eaton, is shown by the fact that the Melon was largely influenced the same year. There is a probability that this influence is more frequent than is usually supposed. Irritation sometimes causes the formation of fruit without the action of pollen. Mr. C. M. Hovey thought that the mutual influence of the stock and graft should be kept distinct from sports. He quoted the views of Thomas Andrew Knight on the subject as follows: "Many gardeners entertain an opinion that the stock communicates a portion of its own power to bear cold without injury to the species or variety of fruit which is grafted upon it, but I have ample reason to believe that this opinion is wholly erroneous, and this kind of hardness in the root alone can never be a quality of any value in a stock, for the branches of every species of tree are much more easily destroyed by frost than its roots. Many also believe that a Peach tree when grafted upon its native stock very soon perishes, but my experience does not further support this conclusion than that it proves seedling Peach trees, when growing in a very rich soil, to be greatly injured and often killed by the excessive use of the pruning knife upon their branches when those are confined to too narrow limits. The stock in this instance can, I con-

ceive, only act injuriously by supplying more nutriment than can be expended, for the root which Nature gives to each seedling plant must be well, if not best, calculated to support it; and the chief general conclusions which my experience has enabled me safely to draw are, that a stock of a species or genus, different from that of the fruit to be grafted upon it, can rarely be used with advantage, unless where the object of the planter is to restrain and debilitate, and that where stocks of the same species with the bud or graft are used, it will generally be found advantageous to select such as approximate in their habits and state of change, or improvement from cultivation, those of the variety of fruit which they were intended to support." Mr. Hovey said that a Pear tree grafted on the Quince gives entirely different growth from one on the Pear, and Pears are higher coloured from such a tree. The Plum stock does not give the supply of sap to the Peach that the Peach stock does. If every stock influenced the graft, we should have no Bartlett Pears or Baldwin Apples, but these are all the same as he knew them when a boy. These and the Vicar of Winkfield and Winter Nelis Pears, the Greengage Plum, the Jacques and George the Fourth Peaches, the black Tartarian Cherry, the double white Camellia, and the Gen. Jacqueminot Rose have been grafted millions of times on seedling stocks, and are still unchanged. The purple Beech is the same throughout, and many others might be named. Mr. Hovey stated that the observations of Mr. Knight extended over forty years, and his own over fifty years. He had grafted late varieties on the Madeleine and other early Pears without hastening their ripening, and he doubted the statement that this effect was produced on the Styrian or Keele Hall Pear when grafted on the Madeleine. He mentioned a case in his own grounds where it might have been supposed that a Beurré Bosc Pear had been changed, but, on careful examination, it proved that a graft of the Lewis Pear (probably cut from a sucker) had been inserted instead of the Beurré Bosc. An alleged case of the change of Beurré Clairgeau by grafting on the Aston Town might probably be explained in the same way. Loudon laid down the principle that grafts from all variegated trees would infect the stock, but Mr. Hovey discussed the subject only so far as respects influence on the character of the variety. He has Seckel Pear trees grafted on Hawthorn stocks, but never saw little haws on them; on the contrary, they bore the finest Seckles he had the previous year. There is no instance, to his knowledge, where it can be shown that when the true variety was grafted it has changed. If trees could be made hardier by grafting on hardy stocks, that would be a very important point; but the idea of acclimatisation by this means is Utopian.

The chairman said that Mr. Hovey had decided the matter to his own satisfaction, but he thought there might still be a question whether the stock does not hasten the maturity of fruit. Mr. O. B. Hadwen said, in allusion to the reported early ripening of fruits grafted on early varieties, that he had noticed that the Northern Spy and Holden Pippin Apples ripen earlier in cultivated ground than in Grass, even though the latter is ploughed occasionally; but on one farm the Holden Pippin is several weeks later than the general crop. Though he had raised twenty-five acres of Apple orchard from seed, he had never seen a single instance where he was satisfied that the stock had influenced the graft; nor could he recall an instance where he could say that the Pear or Plum had been so influenced. Apples vary on different trees and on the same tree, but the stock should influence all alike. He attributed the superiority of the fruit of one tree over another to a difference in culture or soil. He did not wish nurserymen to think that the stock would influence the scion. Botanists say that there are instances, but the weight of evidence is in another direction. If a graft had been taken from a Baldwin tree which had varied and inserted in the original Baldwin tree, it would doubtless have regained its original characteristics.

Mr. N. B. White thought the late ripening of Apples in grass ground might be owing to the frost being kept longer in the ground. He had mulched Pears heavily to keep the frost in and retard the blossoming, and in that way had got better Pears. He grafted a Porter Apple tree for a neighbour with scions of the same variety taken from a tree which produced remarkably fine fruit. At the same time he cut scions from the tree which he was grafting and put them in, and when they fruited he could not discover any difference. He thought the variations of which so many instances had been adduced were simply sports; and said that, though it is interesting to get the facts together, they do not establish any principle.

Edmund Hersey said that when he was a boy his father purchased a piece of land on which was an Apple tree that always dropped its fruit before it was ripe. His father grafted one side of the tree with the Rhode Island Greening, and when the grafts bore, the fruit partook of the character of the stock with regard to dropping. The greatest number of Apples ever gathered from the tree was twelve. The dropping might have been due to the soil. His father bought another piece of land on which was a natural Apple tree which bore enormous crops, but every Apple had a peculiar rot on one side; they would hang until frost came, but when gathered a quarter part would be rotten. Twenty-five scions were inserted in the tree, not one of which took, and it was afterwards budded with summer, autumn, and winter kinds—sweet and sour, and of all colours. The rot affected all the kinds; there never was a peck of Apples free from it. A Baldwin tree was planted close to it and the old tree cut down; the Baldwins never rotted. The tree when cut down was somewhat rotten in the top; it had previously been very sound. The speaker thought these facts positive proof that the stock does influence the scion. His father had two Baldwin trees, one of which by the roadside bore very handsome fruit, though not very large; the other tree, which grew by the side of the barn, bore larger fruit. When the latter was large enough to bear two barrels of Apples it was removed to the roadside, and has continued to bear large, though not so uniform sized, Apples.

The chairman thought we could say that we know the influence of the stock on the graft is proved, and that it may be propagated. As to the influence of the graft on the stock, every nurseryman knows that the character of roots is changed, and that the roots of a row of Baldwin Apple trees in the nursery will be alike, and the roots of a row of Roxbury Russets will be alike, and will differ from those of the Baldwins. Each row can be told by its roots. He thought the subject of more practical importance than it was considered by some. Roses, particularly those of weak growth, will give a much more magnificent bloom when worked on the Manetti stock than those on their own roots.

BALM OF GILEAD.

THE species belonging to the genus *Cedronella*—chiefly natives of North America—are very handsome garden plants and well adapted for either the flower garden or mixed border; they grow well in sunny positions in ordinary soil if well drained. The Balm of Gilead of old writers, *C. triphylla*, is represented to be a useful plant for greenhouses. It is a bushy perennial with compound leaves, having from three to five finely serrated oval-shaped leaflets. It seldom exceeds 2 feet in height. The flowers, which are produced in July and August, are pale blue, and borne on short thick spikes; they are very pretty when the plant is well grown. It was first sent to Europe under the name of "Permento de Tana," and as such was cultivated as long ago as 1697 by the Duchess of Beaufort, principally for the rich odour emitted when the leaves are gently rubbed between the fingers. In mild winters it will grow in the open, but a sunny spot against or near a south wall should, if possible, be chosen for it. The ease with which it is increased by means of cuttings, and the fact of its only requiring the protection of a cold frame even

in severe winters, together with its rapidity of growth, render dependence on mild seasons hardly necessary. It is a native of the Canary Islands, and has been distributed at various times under the name of *Dracocephalum canariense*. *C. cana*, the hoary-leaved species, is a very handsome plant, and useful for ornamental purposes. It grows about 2 feet high, and has a fine erect and graceful habit. Its flowers are produced in July and August in whorls, on a spike about 1 foot in length; they are bright purple and showy. It grows well in the ordinary border, and may be increased freely from cuttings. Another species which should find a place in every collection is *C. mexicana*; it is easily distinguished from the above by the total absence of the hoariness of the leaves; the flowers are reddish purple and are very pretty; they open in September and October. This plant may be used with advantage in the rockery, flowering as it does at a season when most plants are over. D. K.

KITCHEN GARDEN.

AUTUMN CULTIVATION.

ON some soils deep stirring in autumn has a beneficial effect, and the rougher the surface is left the better. I came here fifteen years ago with a firm conviction that autumn cultivation was the right thing everywhere, but so far as this particular soil is concerned, my practice has undergone some modification. I soon found that the land which was turned up last was in the best condition for planting in spring. The thought has often occurred to me that our land must be badly drained, and to some extent that may have been true, as the natural water level is high in this district in winter; but land that is naturally retentive will hold more water when in a loose, open condition than when firmly pressed together, as it is before it is broken up with the spade in winter. Again, adhesive soils under the influence of a sharp burst of sunshine will crack even if the surface is kept loose by cultivation; the heat penetrates to a certain extent, and the earth contracts and fissures occur. The autumn rains come and the land expands again, but does not altogether fill up the cracks thus made; these to a certain extent remain and form natural drains for carrying off the surface water. When trenching is done in autumn, these natural drains are broken up, and the loose adhesive soil holds the water in suspension until the days lengthen and the sun and wind lift some of it up into the air again in spring. Hence it follows that I am not in such a hurry to get the digging of ground done so very early in autumn as I once was that I want to crop early in spring. Taking the average of seasons into account, we do not have much frost before Christmas of sufficient intensity to have much effect on the surface of the earth; and, besides, under a system of close cropping it is not often that any great extent of land can be cleared for trenching before the end of December. The more this matter is thought over, the more convincing it becomes that a very wide experience is necessary to enable anyone to speak with confidence on so important an operation as to when we shall plough or dig. There is, of course, a right time for every district, but it does not follow that what suits one place will suit all, or exactly fit any other, unless the geological formation is similar, and even when that is so there are other matters probably purely local which intervene and alter the conditions under which we work. E. H.

THE POTATO CROP.

LIGHT, sound, and of excellent quality is the true record of the Potato crop up to July 22, and probably still in most localities. On that date I noticed the disease for the first time in a cottage garden about 7 miles from Bury St. Edmunds. That garden seemed specially rich and sheltered; the haulm was abnormally long and strong, the tubers of more than average size. It was, in fact, the old story of a rich soil and abnormal vigour favouring the Potato plague. All

the other gardens and fields in the neighbourhood seemed free up to that date; since then we have had nearly a week of disease-fostering weather—the air heavily charged with electricity, heavy thunder storms of rain and hail, sudden changes of temperature, and a semi-saturated atmosphere. Hardly, however, as yet have the rains reached the tubers, as we have found on lifting a good many to-day, all of which were sound. As the whole of the early varieties are so far matured as to have their skins thoroughly set, the great point is to lift and store them at once. This will not only get them out of the way of the disease, but also prevent the heavy rains from forcing supertuberation, which is almost as disastrous as the disease itself. The latter rots the tubers, the former ruins their quality, so as to render them uneatable. Safely lifted and stored before the disease hits them, they are safe; the ground is also liberated in time for other crops. Not a few of the late crops are exceptionally late; they seemed quite unable to make way against the tremendous drought. The tubers are abnormally small, though fairly numerous. It is possible, therefore, that the recent rains have fallen in time for them. The later or smaller tubers the less the risk of loss from supertuberation. As the rains are now reaching to the bottom of the tubers and their roots, the probability is that the late crops may yet bulk out into crops of average weight and yield. As there is a disease stage as well as season, these late crops do not seem to have reached to the first, and will probably escape the second, being too late for both. Near to maturity is the most susceptible vital condition for the Potato crop, and throughout July the most sensitive season. With the early crops safely stored or eaten before the disease appears, and the later ones thus protected by time and conditions, the probability is that the Potato crop of this year may reach a full average.

D. T. FISH.

Sharpe's Victor Potato.—On January 16 I obtained from Mr. Sharpe, of Sleaford, 7 lbs. of this Potato, and planted 4 lbs. of them on the 21st of that month in a frame. These I lifted on March 13. The remaining 3 lbs. were planted May 10, and some of them were lifted June 25, and were pronounced to be excellent both in taste and quality. To-day (July 29) I have planted some of those lifted on March 13. This is the best early Potato with which I am acquainted. It is well adapted for early frame work, as it makes but little top growth. It is a white kidney of medium size, even and finely shaped.—J. C. SAND, *Cadwell Vale, Louth.*

Sowing Cabbage seed for the main crop next spring should receive immediate attention; select an open position clear of trees or walls, dig it over, and sow broadcast in beds from 4 feet to 5 feet wide. If the soil is moist no water will be needed, but if dry weather prevails I find it best to well saturate the ground before sowing in preference to watering the surface afterwards, which in stiff soils makes it hard. After trying most of the sorts in cultivation I can confidently recommend Heartwell, Early Fulham, Enfield Market, and Early York. Plant out before the young plants get drawn in the seed bed, and a good supply of useful Cabbages will be ensured. The soil should be liberally manured.—J. G. H.

SHORT NOTES.—KITCHEN.

New Tomato.—The *Garten Zeitung* describes a Tomato grown by M. Foldessi, of Buda-Pesth, the fruit of which attains proportions far in excess of those of any variety now commonly grown. It weighs sometimes as much as 2 lbs., and is of a fine red colour. It is reported to keep well and to be of good flavour.—BYFLEET.

Onion maggot.—Having paid particular attention of late to our Onion beds, I find that this pest attacks the tops first, for on opening the stem at the top I could trace the gradual development of the maggot down to the bulb, in which it attains its full size. As I have not seen this stated before, perhaps the fact may be worth recording, in order that in future we may be able to arrest its progress before it gets to the bulb.—ROBERT JONES, *Whitchurch, Cardiff.*

Spinach Beet.—This is such a hardy subject and furnishes such an abundant supply of succulent leaves from a small space of ground, that we make a point of sowing an odd corner somewhere with it every year about the middle of July. We sow it thinly in drills 1 foot apart, and leave it to take care of itself. If frost and cold winds should wither up ordinary Spinach, which they often do in March, we can always depend on a supply from the Spinach Beet. When cooked I am told that few would be able to tell the difference between it and common Spinach.—J. C. C.

The Wordsley Wonder Pea.—Messrs. Webb, of Wordsley, Stourbridge, have sent us a sample of their new Pea, one of the earliest of blue wrinkled Marrow sorts. It is, indeed, an excellent Pea even at this season, but no doubt it would be much finer a little earlier in the year, as the pods sent were too full and hard. This Pea is said to be the result of crosses between Advancer, Little Gem, and Prizetaker, and whilst possessing all the good qualities of the two former varieties, it has both the constitution and the productiveness of the latter. It grows 2½ feet high, is strong and vigorous, and comes into use but a few days after Sangster's No. 1 and Kentish Invicta. The pods, produced in pairs at every joint, are of medium size, slightly curved, and each pod is literally packed with from seven to nine large Peas. The display of this new Pea at the last show at South Kensington exemplified its excellent qualities as regards productiveness. Some of the samples shown from southern districts were past their best, being too old, but the two dishes from Lincolnshire, which won the first two prizes offered by Messrs. Webb, were just in perfection, and showed what an excellent sort it is for a midseason as well as an early supply.

PARKS & PUBLIC GARDENS.

A PROPOSAL FOR THE PARKS.

MRS. ERNEST HART, in an address delivered at a meeting held a few weeks ago, said: "I would fain every summer night see our beautiful parks illuminated with the electric light, and hear bands playing freely to the people, just as now takes place every night at the Health Exhibition; with the one exception, that here the poor are excluded by two circumstances; first, that this resort is miles away from the quarter where they live, and, secondly, that the entrance is guarded by a shilling fee. Whenever I have urged this scheme on those who had influence, I have been met by the remark, 'It was impossible in this dreadful English climate.' This most abused, but still most delightful climate has kept the bands from the gardens of the Exhibition only one night, I believe, during the last two months. Well do I remember one sultry August evening, now three years ago, riding up to town from the country. The sun had set when we left Richmond, and it was quite dark as we reached London. I proposed we should take the road through the park, so that we might canter through the deserted 'Row'; but when I reached the park its intense darkness was alarming, and I was afraid to venture out of the road. It was Sunday evening, and the streets were thronged with a dense moving crowd seeking some relief from hot rooms—the great park was silent and deserted. All London, namely, the well-to-do, were away on the moors of Scotland, by the seaside, on the Alps; the greater London, that were left behind, had the streets in which to enjoy the summer evening. 'Some day,' I said to my husband, 'this park shall be lit by the electric light, and we shall have bands playing every night to the public, and the people shall rest instead of pacing the weary streets.' In that hope I still continue."

The scheme here suggested is one that seems to us well worth considering. Why should not a portion of each of our great parks be set apart during the summer months for purposes similar to those to which the Horticultural Gardens are at present devoted? Why should there not be a

place to which men of all degrees may come when the evenings are fine, and bring their wives and children to listen to the music? There are parks enough in all quarters of London to spare space for the purpose. The advantages of such a project hardly need to be pointed out. It would add brightness to hundreds of thousands of lives which suffer not so much from work as from dullness, and *ennui*, and the want of relaxation. It would do more to clear out the public houses than all the efforts of the United Kingdom Alliance, and it would help to fill up the working man's leisure time. That the working hours of the skilled artisan show a steady tendency to decrease makes it all the more necessary that plenty of sensible and harmless recreation should be ready at hand for him.

One consideration strikes us at the outset, and we trust it will receive due weight from those who may think of giving practical effect to Mrs. Hart's suggestion. If the idea of opening the parks at night for music is entertained, it must be understood that two things will be absolutely necessary. In the first place, there must be complete and abundant lighting, extending over the whole of a sufficient, though circumscribed area; there must be no dark nooks and corners. In these days of electricity there would be no difficulty in fulfilling this condition. If precautions of this kind were neglected, the affair would be likely to prove a failure. If, therefore, the scheme is attempted, it will be necessary to mark off a few acres of two or three of our great parks for this special purpose. That area might be laid out as a garden—in some of the parks, as at Battersea, for instance, the garden is already made—and provided with seats, accommodation for bands, and so forth. Something more would be required for complete success. It would hardly do to bring together so great a multitude in the open air without providing some sort of a shelter against rain. Of course, on settled wet evenings the band would not play, the lights would not be shown, and the visitors would stay away; but sudden showers have to be reckoned with. It might be possible to erect in each of these Volksgärten light buildings of glass and iron, like the Palm house at Kew, sufficiently large to shelter a considerable number of people. These glass houses might contain Ferns and flowers, and should, of course, be sorts of conservatories with very large floor space, or they might be used for popular flower shows.

** So says the *Pall Mall*; but we think the greatest danger for the parks is making them in any way like the town. Their bright and even beautiful lighting may be effected through electricity by-and-by, but buildings, &c., of any kind can only injure their quiet and beauty.—ED.

Gardening in Hyde Park and Kensington Gardens.—We have been lately distressed to see how badly this is done as regards hardy and annual flowers. The Long Walk along the Bayswater Road, for example, shows how mean such gardening can be, with its poor patches of half-grown annuals often placed where no such plants can ever grow—in the shade of large trees. Now-a-days, when so many gardens begin to do justice to these hardy flowers, it is a pity that our public gardens should set a wretched example. In fact, it is so bad, that it were better a thousand times to do nothing. In those shrub borders where, owing to shade, many flowers may not be expected to grow, the shrubs might be allowed to have their own way, or Ivy and Periwinkle might cover the ground in peace. If those responsible for our public gardens do not look about them and see what others are doing, they will soon be far behind. Dabbling in a few annuals and surplus bedding plants to fill up the vast and hungry spaces in early summer will not do much longer. In our public gardens, above all gardens, nothing should be done that is not well done; and we beg the authorities to consider the folly of scratchy flower gardening in the bare-dug borders.—Field.

ORCHIDS.

SHADING CATTLEYAS.

THE fact that Cattleyas are grown by Messrs. Backhouse without shade is one more proof of how impossible it is to lay down any fixed rule in gardening matters. I have been in places where any attempt to grow these Orchids fully exposed to a summer sun would have been attended by disastrous failure. In early days I had charge of a house of Cattleyas and Lælias in a large trade establishment. The house in question was a lean-to, not more than 10 feet wide and faced the south-east. By nine o'clock in the morning it was necessary to apply shade, or there was danger of the foliage scorching, and I have a vivid recollection of having had a severe rebuke through forgetfulness as regards this matter, and which was the cause of some injury. I do not, however, consider very small houses so favourable to the growth of Orchids as those of fairly large dimensions; they are more likely to become over-heated, and if freely ventilated are draughty. Aspect, too, is evidently an important consideration, as where the plants do not get the full sun after mid-day, there cannot naturally be the same necessity to shade as when they get the sun's full rays through the hottest portion of the day. Then, again, there is a vast difference between a lean-to and a span-roofed structure, as even when the latter faces south it cannot become so hot as one placed against a wall, but how much greater must be the difference when such a house runs north and south so that the rafters thereof in a certain sense act as a shade to the plants. Anyone noting this will perceive that after 11 a.m. the time of greatest trial for the inmates of a span-roofed house thus situated is over, and those on the west side of it really do not get any sun worth speaking of before 3 o'clock in the afternoon, and then the force of the sun is on the wane.

SPAN-ROOFED HOUSES are now generally built for Orchid culture, but lean-to's are still employed for want of better in many gardens, and I shall be surprised to hear that Cattleyas can be grown well in them unshaded. The temperature sometimes rises so suddenly in a glass structure placed against a wall, that even with the greatest provision for and attention to in the matter of ventilation the extremes thus created are dangerous, and sometimes productive of much evil to plants having tender or succulent foliage. Whatever may be the position of a span-roofed structure, it is obvious that the atmospheric fluctuations cannot be so great nor so sudden therein, and that the great heat of the sun can be better tempered by the more liberal admission of air; in a word, the natural conditions in which these plants thrive are of more easy imitation. It is evident that if an Orchid can bear exposure to all the sun we get through the growing time without in any way suffering, the tissues must become more solid and the rooting and flowering capacities of the plants thereby be increased, and this is undoubtedly the cause of the exceptionally robust health of Messrs. Backhouse's Cattleyas. Shading is an evil—a necessary one in many cases, but if by some system of culture it can be dispensed with, the gain to the grower will be great. My impression is that in spite of the great success achieved in the culture of these strange and beautiful plants we have still a great deal to learn respecting their requirements. Take, for instance, *Odontoglossums*; who would for one moment think of dispensing with shade in their case? and yet I am told that in some of their native habitats at least many plants are found growing in the full sun, and that these plants are invariably the strongest. Then, again, *Phalenopsis* in the Philippines are often found growing on the topmost branches of trees where a scorching sun roasts the foliage to tinder, so that they absolutely go to rest, there being nothing but thick, cord-like masses of roots visible. But these plants, it is said, flower in a manner of which we can have but a slight conception in this country, many of them producing hundreds of flowers. Some species, such as *Renanthera coccinea*, do not flower at all unless they ob-

tain a considerable amount of sunshine, and the apparent disinclination to bloom exhibited by many kinds has not infrequently been conquered by exposing them to a much larger amount of sunshine than they had hitherto been accustomed to. There is, however, a very great difference between

PERPETUAL AND OCCASIONAL SHADE, and he who has command of the means of shading, so that only that portion of the sun's rays is excluded which would be likely to cause damage, has every prospect of success, whilst with a constantly whitened roof success is problematical. It stands to reason that the shading material should be of a nature to admit a maximum of light, and although some of your readers are not in favour of the lath blinds, I have seen some remarkably fine specimens grown under them; and as they can be so arranged as to shade any portion of the roof at will, there is a better chance of being enabled to treat each plant according to its requirements, that is where the collections are of a mixed description. It is obvious that exposure to the sun must, where the plants can bear it, benefit them in a twofold manner, as the greater quantity of air admitted to counteract the force of the sun's rays helps to strengthen and mature. Shading, therefore, if carried to excess weakens in more ways than one, and is probably the cause of many of the ills which Orchids are heir to. Much moisture with but little air and light have generally for result an unnatural vigour followed by premature decline.

J. C. B.

Disa grandiflora.—This showy terrestrial Orchid, "the Flower of the Gods," is uncommonly well flowered this season in Messrs. Backhouse's nursery at York. Besides the typical form there are several distinct varieties as regards colour, the whole making a brilliant display. The plants are grown in a house exposed to full sunlight, the pots being plunged up to their rims in Sphagnum Moss. In having abundance of moisture at the roots, plenty of sunlight and ventilation, no doubt consists the secret of growing this beautiful Cape Orchid to perfection.

Odontoglossum Pescatorei.—A flower of an extraordinary form this *Odontoglossum* has been sent to us by Mr. Crawshaw, of Rosefield, Sevenoaks. It is remarkable chiefly for its large size. Across the outspread sepals it measures 3½ inches; the lateral sepals are just an inch broad, and the three others are not much narrower. The lip is proportionately broad; the whole flower is pure white except the rostellum and the upper rims of the lip, which are plum-purple. Mr. Crawshaw describes it as a giant *Pescatorei*. He also sends an uncommonly fine flower of *Cattleya gigas* measuring 8½ inches across, of a deep rose-lilac with a broad labellum of the richest carmine-crimson imaginable intensified by the white blotches in the throat. There was seven such flowers on a small plant.

5217.—*Small snails on Orchids*.—I should not advise "S. N." to use lime water for the destruction of snails on Orchids, for even if the water applied at a moderate strength and in moderate quantity was found not to injure the plants, it is doubtful if it would destroy the snails. I have sometimes found this unwelcome company very plentiful after the stock had been potted, which points to the snails being either actually present in the material (most likely the Sphagnum) or to their eggs being there. Traps made of slices of Potatoes or sweet Apples (the latter best) laid freely on the surface of the pots will be found effectual in enticing them; the traps should be looked over daily, when the snails will be found lying under them and can easily be destroyed. As the baits get stale fresh ones must be laid down until the whole are cleared, and also any brood that may come into existence, for unless wholly exterminated the mischief they do is only partially reduced. I have found the small snails the most troublesome in eating the young flower-stems as these first appear from the base of the bulbs.—T. B.

Cattleya Gaskelliana.—A very fine specimen of this new *Cattleya* is now flowering in the collection of Mr. W. G. Riley, Hapton House, near Accrington. The plant is in robust health and some 3 feet in diameter, and is furnished with forty fully expanded blooms. The variety is distinct, having beautiful sepals and petals of a deep rose. The lip is self-coloured rose-magenta with yellow veins. Let us hope that the importers of this valuable *Cattleya* may make other importations of it, and thus give Orchid growers an opportunity of having quantities of this free growing kind, thereby prolonging the gaiety of the *Cattleya* House at a time when few of its inmates are in bloom.

—We are almost daily receiving from various quarters additional evidence of the high merits and value of this new *Cattleya*, which seems to be flowering now simultaneously throughout the country. On all sides we hear good accounts of it, and the flowers we have had sent from various correspondents fully confirm the eulogistic accounts that have been published concerning it. Among the finest specimens we have had sent to us are two varieties from Messrs. Thomson & Son's nursery at Clovenfords. One of these was the finest we have yet seen, not even excepting the fine variety shown last week at South Kensington by Mr. Crawshaw. The flower was about 7 inches across, the broad sepals were of a deep rose-purple, the two lowermost having a distinct medial stripe of orange, which Mr. Thomson assured us was a permanent character of the variety, as it flowered similarly last season. The lip was broad, exquisitely frilled, and of a brilliant carmine-crimson, while the throat was white bordered with lemon. The other variety, though inferior, was strikingly fine, and the spike carried four flowers. Two splendid forms of the same *Cattleya* have also been sent to us by Messrs. Sander, of St. Albans, who first introduced the species. These varieties, too, are indescribably fine, both different from those sent by Messrs. Thomson, thus showing what a diversity of colour there exists in this *Cattleya*. Even if this plant was not so beautiful as it is, it would be valuable on account of its flowering just when there would otherwise be a blank in the *Cattleya* flower season. It commences to flower as soon as the *Warneri* forms are over and continues until the autumn-flowering *C. labiata* and the *Eldorado* varieties are in perfection.

NOTES OF THE WEEK.

Mr. Hugh Low.—There have recently been festivities on a large scale in some of the vast packing sheds of the Clapton Nurseries on the occasion of the marriage of Mr. Hugh Low, who represents the third generation from his namesake, the founder of these nurseries. There have been such disappearances of the once great nurseries of London (*Loddiges*, *Osborn's*, and *Rollisson's*, to wit), that it is pleasant to see one of the oldest and best possessing every sign of vitality and progress. By the way, one who was associated with the late Mr. Hugh Low in the early days of the nursery is still alive and well, active and happy among his hardy bulbs and other plants in his garden at Totteridge. We allude to Mr. J. B. Mackay.

Fasciated Lily stem.—I send you a fasciated stem of *Lilium auratum* which measures 4½ inches across. Its height is 4 feet 10 inches, and it carries seventy-six blooms, each bloom being perfect in itself, but comparatively small. It produced 116 buds, but the others dropped off. I have had a spike with 114 fully expanded blooms on it; the stem in that instance was over 7 feet in height. I have another on which forty blooms are just opening. When making their growth, watching the monstrous stems is most interesting. Some of them throw out their flower-buds on either side of the flat stem, leaving the centre bare; others again produce them in whorls or circles, and here and there on the top may be found blooms of the normal form. The bulbs, as a rule, which produce these stems are of little use the year after flowering, as they make very weakly growth, and in some

instances die outright, but not in all cases.—A. EVANS, *Lythe Hill*.

* A remarkable example of faciation—one of the finest we have seen. Accompanying it is a bloom of an uncommonly thickly spotted variety of *L. auratum*, apparently identical with the variety named *pictum*.—ED.

National Chrysanthemum Society.—At the invitation of Mr. Cannell, a number of members of this society spent a pleasant afternoon on Tuesday last at the "Home of Flowers," Swanley, which is just now well worth a visit, if only to see the Begonias, of which there are five 100-foot houses full. The double varieties especially were most worthily represented. The improvement that Mr. Cannell and others have effected in these plants during the past two or three years must be seen to be believed. Many of the flowers were in size more like *Pæonies* than Begonias, and the colours of some would put zonal Pelargoniums in the shade. The single varieties were also in full force and just now looking about at their best. The houses of zonals were a blaze of colour, and fully maintained the reputation that Mr. Cannell has for them. Several houses were filled with plants grown expressly for winter blooming, and give promise of a very fine show later on. In the other houses, and also in the grounds, the visitors were well repaid for the time spent. Amongst other novelties Mr. Cannell pointed out a double-flowering orange-coloured Abutilon, the first he has bloomed, and also a new variety of *Alternanthera* (yellow), which gives promise of being a valuable addition to the list of yellow bedding plants. A bed of *Begonia Worthiana* was especially noticed as being in fine condition, and a practical demonstration of the adaptability of Begonias for bedding purposes; as a mass it was as effective as a bed of Pelargoniums, and would last in beauty quite as long if not longer. The area now devoted to Roses at Swanley has been largely increased. Before leaving the neighbourhood the new grounds of Mr. Ladd's were inspected, but the time at disposal was too short to do justice to them. One house 685 feet long was wholly occupied with Tomatoes, which were just ripening, a grand crop. Mr. Ladd expects to cut from the above grounds and houses immense quantities daily.

GARDEN IN THE HOUSE.

TABLE DECORATIONS.

THE majority of these are crowded and inelegant, and dreary in the extreme. There is no bright spot on which the eye can rest, but instead either a confused mixture of blossoms without order or beauty or a quantity of trivial prettinesses which distract the mind, or impress it with a notion of time and labour worse than thrown away. Such was the case the other day when I formed one of the guests at a table, in the centre of which stood a tall silver epergne—magnificent indeed, but heavy and ungraceful. This epergne was surrounded by a number of small glasses (much resembling those consecrated to custards), each containing one Pelargonium and one spray of Maiden-hair Fern. The effect was almost ludicrous. Surely it is high time that better ideas prevailed. The dinner-table is a fair and suitable stage for the display of individual preferences as regards flowers and individual taste in arranging them. The tired worker who seeks his home after a day of weary toil should find his table arranged with scrupulous neatness and simple grace. I am not, of course, writing for the wealthier classes—they have the south wall all round their garden in many senses—but for the vast multitudes who fill the middle ranks of life. The labourer and artisan might have his homely meal brightened by his "posy." Nature is a generous mother. There are flowers for all. I am here reminded of Schiller's lovely poem (that flower of his verse), "Das Mädchen aus der Ferne." Perhaps he typified the spring when he tells us she came in with the young year, when the first larks were singing, and gave to everyone a nosegay. Even the poorest shepherd was not forgotten, but she naturally reserved her

choicest gifts for the young. In order that a room may be florally adorned it is not necessary to possess spacious greenhouses or vast grounds. Small gardens carefully cultivated will supply their owners with plenty of flowers during many months of the year. I have seen wild flowers arranged so as to produce charming effects. The owners of extensive gardens are often satisfied with much that is inadequate. I have actually visited wealthy people with a large staff of gardeners who, although spending yearly large sums on their grounds, are afraid of having their flowers cut, and reluctant to give them away. Such floral penuriosity I cannot understand. Flowers are but the children of a day. Their little life being so quickly over, it should certainly be used to create heart-consoling joys and simple pleasures! "Gather ye Roses while ye may," sings one of our old poets. "Carpe diem," says the philosopher. Flowers should specially be grown with a view to house and table decoration, not parsimoniously, but with a liberal hand, that they may be cut without being much missed. I would rather have an abundance of common flowers (and these are often the most beautiful) than possess a few rare blossoms too costly to gather. In table decoration, the inevitable white cloth makes bright colours necessary by gaslight. At a simple dinner some time ago I remarked a pretty effect produced by laying down a piece of crimson plush 2 yards long and nearly a yard wide in the centre of the table. It was bordered by a thick row of blue (not purple) Pansies, which contrasted well with the red. In the middle stood a tall dish of fruit piled high, and on each side of it a blue bowl filled with Hydrangeas and pieces of some dark-leaved Coleus. These were carefully arranged with their own foliage. With the exception of a small bouquet for each guest, I noticed no other flowers, but ruby glass and china of good design supplied all the colour which was wanted. Though the brightest weeks of our fleeting summer are well nigh over, and

The air is now soft with the autumn to be,

we have still much to look forward to. Late Roses will last long. Scarlet Geraniums contrasted with the white *Anemone japonica* and the purple Clematis or Heliotrope, single Dahlias, Asters, and many more will supply lovely bouquets, while far on in the waning year I have seen the despised Michaelmas Daisy and the hardy Chrysanthemum make a room bright as in the days which are no more. W. N.

Oenothera Lamarckiana.—The value of this as a cut flower for indoor decoration is not enough known. On a growing plant the flowers close and droop in sunlight and bright daylight, but in the shade of a room they remain all day in an open state nearly as good as on the growing plant in the evening and early morning. Cut 3 feet long and grouped in a tall glass with a large branching piece of *Eryngium amethystinum* they form an important room decoration that will last for a week and only requires the daily removal of the dead flowers.—G. J.

BOOKS RECEIVED.

WE have received the following handbooks published under the auspices of the International Health Exhibition by Clowes & Son, Charing Cross, viz.:—"Healthy Nurseries and Bedrooms." By Mrs. Gladstone. "Alcoholic Drinks." By Dr. J. L. W. Thudichum. "Accidental Injuries: their Relief and Immediate Treatment." By James Cantlie. "Diet in Relation to Health and Work." By Dr. A. Wynter-Blyth. "Healthy and Unhealthy Houses." By W. Eassie, C.E. "Healthy Furniture and Decoration." By R. W. Edis, Architect. "Dress and its Relation to Health and Climate." By E. W. Godwin. "Infectious Disease and its Prevention." By Shirley F. Murphy. "Health in the Workshop." By J. B. Lakeman. "Ventilation, Warming, and Lighting." By Captain Douglas Galton. "Athletics" (part I.), by Rev. E. Warre. "Days and Hours in a Garden" (2nd edition). Elliot Stock, Paternoster Row. "Greenhouse Management for Amateurs." Bazaar Office, 170, Strand. "Modern Window Gardening." By S. Wood. Houlston & Sons, Paternoster Square.

QUESTIONS.

5224.—**Red rust on Roses.**—My Rose trees are covered with red rust. Perhaps some of your readers will kindly give me advice as to the best method of getting rid of it.—J. S.

5225.—**Peat moss litter as manure.**—Can any of your readers give me any information about the use of peat moss litter? Is it as good as straw litter for use in the garden or in Melon frames?—C. M. D.

5226.—**Chrysanthemum manures.**—Can anyone interested in Chrysanthemum culture inform me the price of sulphate of ammonia, whence it is most readily procurable, and the best way and proper time to apply it to the plants? I am told that Messrs. Dixon, Mr. Davis, and other noted growers use this manure in preference to any other. Is this true? Any information will be welcome.—B.

5227.—**Guano dressings.**—Will someone who knows say what is meant by "a good dressing" of guano for Roses? I tossed a Charles LeFebvre on its own roots with one dessert-spoonful of guano mixed with four times the quantity of soil and watered it in. In two days the Rose shrivelled and died. Did the dressing kill it? How often should outdoor Roses be dressed with guano?—M. E. H.

5228.—**White Lilies.**—I have many clumps of the Madonna Lily in my garden, but can rarely get them to flower. They throw up fine healthy flower-spikes, but all wither away just before they ought to open. Many of them also produce abnormal or monstrous growths. Can any of your readers advise me what I should do, and what soil they like best, and situation, &c.?—E. A. K.

5229.—**The Widow Iris.**—Can any of your readers inform me as to the botanical name of the small black Iris found, I am informed, only on a hill near Florence, and mentioned by Mrs. Boyle, of Maidenhead, in her little book on her garden, as *La Vedora*, or the Widow Iris? It is a bulbous Iris, and the bulbs are black and rather long in the neck.—F. C. C. B.

5230.—**What sized boxes** are required and how should they be made to exhibit the following cut blooms:—1, Roses, twenty-four varieties, three blooms in a truss; 2, Asters, twenty-four varieties, single blooms; 3, Roses, twelve varieties, single blooms; 4, Asters, twelve varieties, single blooms? In what way should stands be made for exhibiting Grapes, three bunches? Could anyone tell me where to obtain these boxes, &c., ready made?—G. H. C.

5231.—**Jurunda Strawberry.**—What is the origin and cropping value of this Strawberry? and has it been tried anywhere in this country? A colonial visitor, who has spent some time in New York, and has friends engaged in the fruit-growing business there, tells me that it is largely grown for the market of that city, and that the fruits are very large and good. The way in which he pronounced it sounded like *Chicunga*, and he expressed great surprise not to have found it in England.—A. N., *Somerset*.

5232.—**Melon roots decaying.**—We have a span-roofed iron house and planted our Melons in it in the middle of May. They were good strong plants. The soil was composed of a rich turfy loam and road scrapings equal parts, with a good dressing of rough bricks and old crocks. The temperature 75° to 80° at night, from 80° to 85° by day, the heat during the dry weather sometimes rising to 95°. Syringing and watering were, perhaps overdone, as was a top-dressing of strong butcher's manure which I applied rather against my own judgment. The results were first a rank luxuriant growth, a medium setting of fruit (which has now reached to three parts of its usual size), and decay of the roots. I had carefully watered them to see that there was no canker on the surface, but to my surprise on noticing the plants flag, I examined the roots and found them decayed. Was this the result of too strong rank manure? I should like to have the opinion of some good Melon grower on this subject.—R. D.

LATE NOTES.

Fungus (X. Y. Z.).—The fungus growth sent is the early condition of the dry rot fungus (*Merulius lacrymans*); it frequently destroys woodwork in greenhouses.—W. G. S.

THEIR Royal Highnesses the Crown Prince and Princess of Germany (Princess Royal of England), with the Royal children, paid a visit on Wednesday to Mr. William Bull's Orchid exhibition at Chelsea.

Weather prognostics for August.—An East Anglian correspondent prognosticates cloudy, moist weather, with intervals of sunshine, for August, and says believers in St. Withwin will this year be able to grow to their hearts' content, for there will be few days in this period without rainfall, often very heavy, alternating with sunshine. Under such atmospheric conditions—calm, moisture, warmth—fungi will grow rapidly. Mushrooms will be abundant, root crops and Grass will grow apace; but Potato disease and Wheat fungi will be also, he adds, very prevalent.

Names of plants.—*G. F.*—1, *Nephrolepis tuberosa*; 2, *N. exaltata*.—*Mrs. M. A.*—*Lysimachia ciliata*.—*J. H. Valence*.—*Cymbidium sinense*.—*E. M. F.*—*Lilium tateum*.—*W. Spencer*—1, Fronds not fully matured; 2, *Hypericum glandulosum*; 3, *Antennaria margaritacea*; 4, *Aconitum variegatum*.—*W. H. Kelland*.—1, *Malva moschata*; 2, *Eryngium alpinum*; 3, *Epilobium angustifolium*; 4, *Actæa spicata*. We name but four plants at one time.—*G. C. Turway*.—1, apparently *Telekia speciosissima*; 2, *Eupatorium cannabinum*; 3, variety of hybrid *Delphinium*; 4, *Myrica Gale*.—*E. C. M.*—The plant you send is *Glaux maritima* so far as we are able to determine from crushed specimens. In order to eradicate it you must either root it out or try the effect of a weed-destroying liquid.—*Capt. Dundas*.—Next week.

No. 664. SATURDAY, Aug. 9, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare.*

GARDEN ROSES.

THE time has, I think, arrived when our selections of garden Roses should be revised in order that those who wish to grow Roses to be effective in the garden may not be burdened with varieties only suitable for exhibition. It may of course be said that a Rose that is worth cultivating for exhibition is also a garden Rose, but that is not my view—not that I disparage the merits of any Rose, but what I wish to maintain is that there are some sorts of Roses better adapted for garden decoration than others, and in the interest of the general Rose-loving public I think the best for both purposes should be selected and classified, and amongst the readers of THE GARDEN there must be many both competent and willing to do this. I am quite satisfied that it would be a relief to many if the best twelve or twenty-four Roses, and for larger growers perhaps an increased number, were pointed out for each purpose. The weather during the present season has certainly helped us in this matter. The drought that extended from April to nearly the end of June, associated as it was through the latter month with almost tropical heat, brought Roses on with a rush, so that many varieties which are not as a rule available for exhibition purposes in other years until a fortnight later were in capital condition for all the early shows. I was, therefore, almost tempted to disbelieve the old dictum that "every Rose has its season of flowering," for there was certainly no distinction this year. Even such late flowering varieties as Madame Lacharme, Baroness Rothschild, and Mabel Morrison were well in flower in the west of England at the end of June. Then down came the rain and the temperature, too, affording a capital opportunity for making notes of such varieties as defied the wet and the reduced temperature. A very little observation served to show that there are some varieties better adapted for garden decoration than others, for they expanded their blossoms quite as freely as when exposed to continuous sunshine, while others refused to open, and remained upon the trees until they became hard balls of decaying matter. Noteworthy was the fact that the varieties remarkable for fine form when grown under favourable conditions were conspicuous amongst those that refused to open.

THE FIRST LESSON to be deduced from these observations is that the finest formed Roses are not the most reliable for garden decoration. For our purpose we may take La France as the type of a good Rose, and I could name many more perhaps more perfect in outline, but still less valuable for the garden, because with a low temperature and a damp atmosphere they refuse to expand. As examples of sorts that partake of this character I may name Madame Eugène Chambeyran, Madame Noman, Pierre Notting, and Camille Bernardin. Nevertheless, I would not alter the form of these if I could. All that I desire is to be of service to those who have not opportunities of making observations

for themselves. I have also been much interested in the behaviour of the large varieties with flat flowers, and what has struck me as remarkable is the fact that although many of them contain a large number of petals, that is to say they are very full flowers, they have, as a rule, opened better than those that are considered to be better in form. I do not, however, like these for the garden, for unless the temperature is fairly high and the air dry, we rarely get them to open satisfactorily. Such varieties as Captain Christy, Marie Finger, Comtesse de Nassau, and Madame Lacharme are varieties that cannot be depended upon; in fact, they are fine-weather Roses, and therefore only suitable for those who are content to look leniently on their capricious character. They want substance in their outside petals. They are so delicate, in short, that a heavy storm of rain or rough wind is sufficient to injure them to an extent that prevents their expansion, or rather I should say the injured petals begin to decay, thus enveloping the bud in a strong band, and the plants have not sufficient force in them to cause the decaying part to give way. Many varieties may be found in this condition after rain. Amongst these I may mention Peach Blossom, Hippolyte Jamain, Berthe Baron, Bessie Johnson, Louisa Darzane, Marquise de Castellane, Miss Hassard, and Marchioness of Exeter. It is worthy of remark, too, that more light coloured Roses than dark ones suffer from this defect. In my own practice I have tried stimulating the roots, but was only partially successful. The less number of petals a Rose is composed of the better it opens. The average number of petals should be about fifty, a number sufficient to make up a good flower. When this number is greatly exceeded the flowers require very favourable conditions to enable them to open. Empress of India or Charles Lefebvre are good types of garden Roses; the number of petals in a flower of either of these does not often exceed fifty-five; they therefore open better under all sorts of conditions than those with a larger number. Such very full flowers as Marie Finger, Comtesse de Nassau, Madame Lacharme, and Captain Christy vary from 85 to 130, and therefore these and many others remarkable for their very full flowers are not in my opinion adapted for the garden.

MY SELECTION of twelve varieties would be, Annie Wood, Empress of India, Charles Lefebvre, Exposition de Brie, Emily Laxton, Jules Margottin, Elie Morel, François Levet, Boule de Neige, Mdlle. Catherine Soupert, A. K. Williams, and Nardy Frères, and if I wanted more I would shun the full cup-shaped flowers and select from those that had reflexed petals.

J. C. C.

Tea Roses.—Own-root Teas have long been recommended for walls. They remain longer in vigorous health, and send up more robust and vigorous suckers than worked plants, and the latter under these conditions become new plants of exceptional vigour. But dwarf Tea Roses on their own roots have been as yet but little used in the open, but where this class of plant has been employed they have proved the very best for yielding a profusion of Roses of the very highest quality. A slight protection in winter preserves the crowns alive, and if the cultivator is content to wait till July for his sweet harvest of beauty, the crown of the Rose is all he need concern himself about. For though killed back to that it will speedily start forth anew and produce shoots and flowers in abundance. But if Roses are wanted earlier, there must be more care taken of the old tops, and these may readily be protected by a thin screen of litter

or] of boughs, which mostly carry the Rose tops through the winter in safety. As soon as the first cuttings from these advanced shoots are secured, the shoots themselves may be cut back close and sharp, and this results in a second break of stronger shoots, which yield finer blooms for a longer period than the first.—D. T. FISH.

Rose Celeste.—I am pleased to see that this beautiful old Rose is receiving some attention. It is surprising how such valuable old plants get elbowed out of gardens, though so easy to cultivate and charming when in flower. A lady correspondent who kindly sent me some plants of it in the spring (and which I am glad to say are growing freely) has also recently sent me some flower buds of it, and although they had travelled all the way from Ireland, when placed in water their fragrance for two or three days was delightful. The delicate shading down to a dark pink colour at the base of the petals is a remarkable feature in this Rose.—J. C. C.

The budding season.—Had the drought lasted much longer budding would soon have become impracticable. The bark of the stocks had set with a hardness that refused to be lifted freely or to run at all. Since the heavy showers it has been flooded into budability, a most fortunate circumstance for the rosarian, commercial or otherwise, to whom the loss of a season is, indeed, a very serious matter. The leaves are particularly vigorous and free from blight; they have had but one fault and that is now partially removed. The bark has clung to the wood with vice-like tenacity so as to have rendered budding impossible. The Rose-buds have also been small, the Rose-wood tough rather than plump and full of sap. The buds are now swelling well, and the long parched Roses are having a full flooding of sap, so that budding will proceed merrily from this date. Seldom have fewer fine Roses been to the fore than at the end of last July. The heat and the drought pushed all the Roses to the front within a very short period of time. They came, they disappeared, may be written of most of them, and the Roses, even the Teas, seem less in haste to break into fresh growth and blossom than usual. The heavy thunder showers will probably hasten good breaks within a short time, and the autumnal harvest may be as plentiful and fine as the Roses in the end of July have been few and far between.—D. T. FISH.

NOTES FROM KEW.

IN the Cape house, where one generally finds something interesting or rare in flower at all times of the year, the following plants are now flowering, viz.: *Littonia modesta* and its variety *Keiti*, both good plants for the cool greenhouse; where trained along a rafter they yield a profusion of yellow bell-shaped blossoms during the summer months. *Gloriosa superba* and *G. Planti* are also in fine condition, the first being a much better plant than the second in point of size and colour of flowers. *Campanula Vidalii*, of which there is annually in this house a fine display of flowers, we commend to anyone in search of a useful and easily managed white-flowered plant for the conservatory. Although stated to be hardy, we do not know of an instance of its having stood out of doors for any length of time. *Grevillea annulifera*, a stiff, wiry-leaved plant with terminal racemes of rather large white flowers, which are yellow on first expanding, is a good ornamental plant with a strong, and perhaps to some, disagreeable odour. *Amphicome Emodi*, the handsome *Bignoniad* to which we have before called attention, is bearing racemes of deep bell-shaped, rather large flowers, the tube of which is orange coloured, the limb being deep rose. *Lachenalia orthopetala* is a new introduction characterised by Rush-like foliage and dense heads of pure white sweet-scented flowers. *Physianthus albens*, the climbing plant with *Stephanotis*-like flowers—noted last year—is again in blossom, as are also *Exacum macranthum* and the pretty, though small, *E. affine*, together with a pan of *Streptocarpus parviflorus*, the pretty white-flowered species; *Gladiolus blandus*,

G. natalensis, *Coburghia luteo-viridis*, *C. trichroma*, *Hæmanthus carneus*, and a hybrid between *H. albis* and *H. coccineus*. Some pans of *Disa grandiflora* are nicely in flower, and several other bulbous plants of more or less interest. These, along with the Heaths and Pelargoniums, which are permanent features in this house, make a rather unusual display just now. B.

FLOWER GARDEN.

NOTES ON HARDY FLOWERS.

LATHYRUS LATIFOLIUS ALBUS.—This is quite a plant for every garden, being a vigorous and constant bloomer. Even near large towns this white Everlasting Pea somehow keeps clean and robust. Many are unaware of its perennial duration and class it with annuals. A row of it 12 yards in length, consisting of plants three years established, is accommodated with a few stout stakes and light bars into which fresh twigs are stuck every spring. These Peas thus treated grow 6 feet or more high, and at present form quite a hedge of bloom. They are almost the only pure white flowers from which we can cut largely just now. This Pea hedge forms a capital screen to two rows of summer-flowering *Pæonias*, and the effect of a bed of coloured *Roses* on the sunny side is improved by having a heap of glaucous foliage and white bloom as a background.

APIOS TUBEROSA I find to do much better when mixed with something else as a companion climber than alone, and, therefore, I grow it at one end of the Pea hedge. True, it makes much longer growth than the Peas, but it twines along the row, and in late summer a few bunches here and there of its sweet-scented purple flowers form an agreeable change where white has long been the only colour. Many complain that they cannot grow this singular-rooted climber. It loves a light soil and the coolness belonging to a little shade. It will not flower until the second year after it is planted. If it gets into proper quarters it will soon occupy a large space, and its egg-shaped tubers bound together with twine-like connections extend several feet in one season. If these are not cut out each will sprout and form an independent plant in spring.

ARISEMA TRIPHYLLUM.—This is quite at home in boggy peat and under the shade of a thickly-grown tree. I say quite at home because though it has flowered in the same spot two previous years, it never produced such a fine knob of seed as it is doing now. I find this *Arum* to do better in every way when grown in the open than in pots and pans, in which it becomes lanky, no matter how near it may be to the glass, and the flower-spathe is deficient in colour compared with that in open-air grown specimens. In pots, too, with me the vital parts of the tubers have proved less capable of resisting the effects of the parts that annually decay. Another plant which just now attracts notice whilst in its seed state is

ACTÆA SPICATA (the Baneberry or Herb-Christopher), but the variety *rubra* is now meant. In this the clusters of berries, held erect on almost woody stems, are as bright and as large as Red Currants, and last good a long time. I have two plants of this, and it has been interesting to note how under cultivation this herb insists on certain conditions; for instance, my longest established plant does not even flower satisfactorily where there is no lime in the land. Many things we know will put up with garden fare, though different from that of their wild homes; this, however, seems to crave for its native dry, calcareous food, and a plant of it grown with a bit of lime in the soil is the one which we find to flower and fruit so well.

MEADOW CRANESBILL (*Geranium pratense*).—The double-flowered form of this has been most showy for these three weeks or more. In this variety we have a clear gain for our gardens compared with the type. Its flowers are more numerous and lasting, the foliage less coarse, and the habit more compact. The flowers resemble, in fact, little blue *Roses*, and, as a matter of course, a well-flowered specimen of this plant is admired

by everybody. It is certainly one of the few hardy *Geraniums* that ought to be in gardens of limited space.

NIEREMBERGIA RIVULARIS (White Cup) makes a lovely pot plant, and, like the *Star Flower* (*Trientalis*), not only forms a more compact specimen, but blooms more freely when its roots are thus confined; moreover, the delicate whiteness of the cup and its closeness to the ground almost make it unfit for open-air culture. Though it is both hardy and pretty outside, if once seen in flower under the shelter of a cold frame, to which plants of it may easily be taken just as they begin to open their earliest buds, the superior quality of the bloom will be apparent. If set in saucers of water with a little liquid manure added occasionally a few plants will be worth a daily visit.

POTENTILLA NEPALENSIS, or *formosa*, is one of those single-flowered species well deserving a place in every garden. Its cherry-red flowers shading to buff have a rich maroon centre, and, seen at a little distance off, a bushy plant of it nearly 2 feet high is most showy. Unlike some others belonging to the same genus, its flowers remain open in dull weather, and a plant which was kindly given me by Mr. Carrington Ley only last autumn has been in flower six weeks, and promises to last good for some time yet. The flowers when cut are charming, especially by gas-light.

LINARIA VULGARIS VAR. PELORIA well deserves attention, its crop of bloom lasting quite six weeks where there is a well established patch of it. The flowers, too, are so quaint as regards arrangement, and their deep orange, pale yellow, and green tints are so blended as to make them at once distinct and beautiful. It has been quite a favourite here for some three or four seasons. As to culture, it runs pretty freely at the root in light soil, but into the same kind of soil that has become firm as a walk the roots never enter; from this I should imagine that it would not succeed in stiff land, in which, however, I have not tried it. Well established plants of the dwarf

GENTIANA BRACHYPHYLLA and **BAVARICA** as yet show no signs of bloom, though the plants are quite healthy. *G. ornata* is nearly all bloom and promises to be happier than the European kinds in our climate. A spare plant was pulled to pieces a fortnight ago, and not only has every bit rooted like Wall Pepper, but the buds and flowers are normal. The European *Gentians* require a deal of water, and in dry times there is danger of washing too much soil from the heart of the plants, and thus exposing to the midday sun parts that cannot endure heat. I fancied this was the cause of some brownness in the case of some of my plants, and I have since been as careful to frequently top-dress as to give water; the result is vigorous health, and it may be added that many other alpine plants are benefited by similar treatment.

Woodville, Kirkstall.

J. WOOD.

ALPINE PLANTS.

THOUGH too late in the season to see alpine plants at their best, the following amongst the late flowering kinds are well worth growing. Few of them are prettier than the bright pink *Erythraea diffusa*, 3 inches or 4 inches high, and the prostrate *Cyananthus lobatus*, with blue *Achimenes*-like flowers; the latter, though grown here on rock-work, is, I think, still better suited to a bed of damp peat. *Gentiana septemfida* is grown largely here, the seedlings varying much both in habit and shade of colour; a large plant, when in full blossom, shows it to be one of the most effective of the *Gentians*, as well as one of the least difficult to grow. The rare *Primula suffrutescens*, from California, is in blossom; the habit is singular, and the blossom resembles that of *P. rosea*, but has a rather more crimson shade of colour. Mr. Lindsay has succeeded in introducing successfully the little *Primula minutissima* from the Himalayas. *Potentilla nitida rosea*, from the Pyrenees, is a pretty rock plant with silvery foliage; and the finely-cut foliage of *Chamæbatia foliolosa* makes it most effective; it is, however, still very

rare. Two dwarf white *Roses* for rockwork are *R. Paquerette* and *R. Little Pet*—the latter perhaps the prettier of the two. *Helianthemum umbellatum*, very dwarf, with pure white blossoms about half-an-inch across, and *Hypericum verticillatum*, with very small Heath-like foliage and little golden flowers, are good; the latter is often confounded with *H. Coris*. *Phlox pilosa* is like an attenuated form of *P. ovata*, and very pretty; and a little later *Galium rubrum* will be in full blossom—a dark red feathery mass. *Dianthus Little Gem* has a very small, double white flower about half-an-inch across, and the plant is about 4 inches high. *D. Atkinsoni*, rather tall, has bright red blossoms, and *D. barbatus var. pumilus* is also effective on rockwork. *Campanula barbata alba* is still prettier than the type. A polypetalous variety of *C. pulchella*, with star-shaped flowers, is at first sight quite unlike a *Campanula*. *Aristolochia rotunda*, with its quaint flowers of special botanical interest, blossoms when hardly 1 foot high. *Bambusa Fortunei viridis striata*, with bright golden variegation, is prettier than the white variety. *Veronica perfoliata*, an Australian species, though not showy, is very unlike other *Veronicas* in habit. *V. ligustrifolia* does not blossom more freely here than it does in Ireland, nor does it in any way equal *V. Colensoi* in beauty. *V. epacridea*, with small, but numerous leaves; *V. pimelioides*, a minute prostrate kind; and *V. purpurea-coerulea*, like a very small form of *V. buxifolia*, with some of the numerous other kinds introduced by Mr. Anderson-Henry, have not as yet flowered here. But even as foliage plants some of these small-leaved kinds are worth growing as dwarf evergreen shrubs, especially *V. salicornioides*, the most curious of them all. The New Zealand *Spear Grass*, *Aciphylla squarrosa*, flowers well here. The strongly guarded flower-spikes, especially those of the seed-bearing plants, are very singular; the head of seeds is enclosed in a strong network of stiletto-like leaves.

This plant appears to require a comparatively dry climate. In the mild damp climate of the south-east of Ireland I have twice failed to grow it out of doors through the winter.

Amongst the *Alliums*, *A. oreophilum*, with bright purple flowers about 8 inches high, is a good rock plant. It resembles, but is less vigorous in habit than *A. McNabianum*, the latter a fine bright purple kind, sent from N. America by Mr. Murray, who introduced *Cupressus Lawsoniana* and many other good *Conifers*. This *Allium* has been grown here for many years, but it is probably still very rare.

Another rare plant from N. America is *Clintonia Andrewsiana*; it has large bunches of dark red flowers, succeeded at this season by dark blue berries. *Libertia azurea*, rather over 1 foot high, with bright blue blossoms, and *Sparaxis pendula*, about 3 feet high, with sprays of pale pink flowers, are both good. *Zygadenus elegans* is a very distinct Melanthaceous plant with greenish white blossoms, the flower-stems being about 1 foot high.

C. M. OWEN.

COLOUR IN FLOWER GARDENS.

MANY large houses have formal gardens immediately adjoining them, designed and intended to form an inseparable part of the façade, and, therefore, requiring to be treated with a certain stiffness. Though, perhaps, the least enjoyable form a garden can take, the designer's intention should be respected, and the best way of treating it has to be considered. Here we must necessarily employ the bedding system. We must put out of mind nearly all the higher sense of enjoyment that we have in flowers, the delight in their beauty individually, or in natural masses, the pleasure derived from a personal knowledge of their varied characters, physiognomies and ways, that gives our flowers so much of human interest and loveableness, and must regard them merely as so much colouring matter to fill such and such spaces for a few months. We are restricted to a kind of gardening that, though better in degree, is in kind not far removed from that in which the spaces of

the design are filled with pounded brick, slate, shells, or some colouring substance other than flowers. The best rule in the arrangement of a bedded garden is to keep the scheme of colouring as simple as possible. The truth of this is easily perceived by an ordinary observer when shown a good example, and is obvious, without any showing, to one who has studied the question of colour effects; and yet the very opposite intention is the thing most commonly seen in gardens, namely, a garish display of the greatest number of crudely contrasting colours, than which nothing can be worse from the point of view of refined taste. How often do we see combinations of scarlet Pelargonium, Calceolaria, and blue Lobelia—three subjects excellent as bedding plants if used in separate colour schemes, but in combination they can hardly fail to look gaudy and vulgar. In this kind of gardening, as in any other, let us by all means have our colours in a brilliant blaze, but never in a discordant glare. One or two colours used temperately and with careful judgment will produce nobler and richer results than many colours purposely contrasted or wantonly jumbled; and the formally designed garden that is an architectural adjunct to an imposing building demands a dignified unity of colouring rather than the petty and frivolous effects so commonly obtained by the misuse of many colours. As practical examples of simple harmonies, let us take a scheme of red for summer bedding. It may range from palest pink to nearly black, the flowers being Pelargoniums in many shades of pink, rose, salmon, and scarlet; Verbenas, red and pink; and judicious mixtures of Iresine, Alternanthera, Amarantus, the dark Ajuga, and red-foliaged Oxalis. Still finer is a colour scheme of yellow and orange, worked out with some eight varieties of Marigold, Zinnias, Calceolarias, and Nasturtiums—a long range of bright, rich colour from palest buff and primrose to deepest mahogany. Such examples as these of strong, warm colouring are admirably adapted for large spaces of bedded garden. Where a small space has to be dealt with, it would better suit arrangements of blue, with white and palest yellow, or of purple and lilac, with grey foliage. A satisfactory example of the latter could be worked out with beds of purple and lilac Clematis, trained over a carpet of Cineraria maritima; or one of the white-foliaged Centaureas and Heliotropes and purple Verbenas, with silvery foliage of Cerastium, Antennaria, or Stachys lanata. These are some simple examples easily carried out. The principle once seen and understood, and the operator having a perception of colour harmonies, modifications will suggest themselves, and a correct working with two or more colours will be practicable; but the simpler ways are the best, and will always give the nobler result. There is one peculiar form of harmony to be got, even in varied colours, by putting together those of nearly the same strength or depth. As an example in spring bedding, Myosotis dissitiflora, Silene pendula (not the deepest shade), and double yellow Primrose or yellow Polyanthus, though distinctly red, blue, and yellow, yet are of such tender and equal depth of colouring, that they work together charmingly, especially if they are further connected with the grey-white foliage of Cerastium. J.

Dianthus Napoleon III.—This plant is worthy of more extensive cultivation than it receives. A row 50 yards in length of it, and the plants about 18 inches apart, in Mr. Milne's garden at Trinity, Edinburgh, is a sight worth seeing; each plant had from 100 to 120 of its dazzling crimson-scarlet flowers expanded, and its flower clusters so crowded with buds, that it will flower until October or November. Such a plant is most valuable either as a bedding plant or for planting singly in borders.—R. M.

Galega officinalis alba (the Spanish Goat's Rue) is a very handsome plant, perhaps a little too tall for small gardens, but owing to its neat, compact, pyramidal habit it does not take up much room. It is now literally covered with neat

racemes of pure white flowers which continue to expand for several weeks together. In addition to its value as a cut flower for vases, as a button-hole bouquet it is very pretty in combination with a cluster of Everlasting Peas, the latter forming the centre, and the Galega on either side dressed with its own leaves.—R. M.

PYRENEAN MICHAELMAS DAISY.

AMONGST early-flowering Asters this is one of the best and showiest for mixed borders. When *A. alpinus* and *A. sibiricus* are over, or nearly so, *A. pyrenæus* takes their place, and very appropriately fills up the gap. It is one of those plants which give but little trouble; not having the underground running shoots of the *A. æstivus* group, it takes up comparatively little space. In average seasons it grows to a height of about 2½ feet. It dislikes



Bloom of the Pyrenean Michaelmas Daisy.

a dry situation, in which it grows very dwarf and does not flower well. The leaves, which are stem-clasping or sub-perfoliate, are broadly lanceolate, furnished with sharp irregular notches, and densely covered with short white hairs. The flowers are borne in clusters and terminate the stem; they measure from 1 inch to 2 inches in diameter, and have broad, pretty, blue-coloured rays. This Aster flowers early in July, and continues in bloom well into August. When in full flower it has a compact and handsome appearance. D. K.

Daisies in sunshine and shade.—The drought which we have had has been very trying to moisture-loving plants; and the difference observable in the same kind of plant growing in close proximity, in the same soil, but one exposed to the full rays of the sun and the other shaded, has been very remarkable, inasmuch as the fully-exposed plants ceased flowering and the foliage looked rusty and dying, while those shaded were

a mass of flower and luxuriant foliage. Therefore in selecting summer quarters for plants of this class, we should make shade from the direct rays of the sun a point of the first importance; for, although such plants do revive on the return of moist weather, it is difficult to understand how they can be benefited by the defoliation to which they are subjected. Daisies, Primroses, Polyanthus, and similar plants in the south of England are undoubtedly benefited by partial shade during the hottest months of the year; and those who grow them for filling spring flower beds should bestow on them special care, for the transplanting will have left them in a condition to be easily affected by drought. Evergreen branches laid over the beds make good temporary shade, and a thin covering of litter or straw also answers the same purpose. It is frequently argued that they flower all the better for a good roasting, but I feel sure that the loss is far greater than the benefit derived from too much exposure.—J. GROOM.

Galtonia candicans.—"A. S. W." (p. 68) mentions sowing the seeds of this bulb under glass. I can assure him he will get better results if he does not coddle the plants in any way. It is better to sow thinly in drills in the open ground in April, allowing the bulbs to remain where the seed was sown until the following spring, when they should be taken up and planted further apart. Many of them will flower the second year, but if large roots are wanted, the flower-spike should be cut out as soon as it appears. To be appreciated this plant must be seen growing in rather large masses.—J. C. C.

The Tree Poppy (*Romneya Coulteri*).—We have never seen anything more beautiful than a plant of this in flower at Munstead. It has an enormous white flower and rich yellow centre. The habit of the plant is tall, broken, and most picturesque. A more beautiful and distinct plant it would be difficult to imagine. It is shrubby, and seems to love a warm, sandy soil. It is remarkable that so distinct a plant from a much warmer country than our own should thrive so well. It is a native of California, and we have never seen it thrive so well as in the warm sandy soils in Surrey.

Clematis coccinea.—The reference to this plant in THE GARDEN (p. 77) is rather tantalising to me, as I bought two plants of it when first sent out, and grew them for two years, when I was so disappointed with them that I threw them away. The blooms were so deficient in colour, that I considered the descriptive name quite misleading, as my plants only produced flowers with the slightest tinge of red in them. The fact that Messrs. Veitch's plants were grown in the open may have had something to do with the matter; mine were grown indoors, but I am inclined to believe that there is more than one variety of it.—J. C. C.

Earthenware rings.—For several years I have used these rings, but for a different purpose from that described by Mr. Palmer. I have them laid upon the surface of the ground, then filled with soil and planted with Sedums and Sempervivums. This has the double advantage of keeping the plants dry, which is their natural condition, and also preventing them, especially the Sedums, running into one another. They are useful also for protecting anything tender or newly planted in the open ground, as being open at the top the plants get any rain that is going and none of the burning sun. For underground work they will also, I am sure, be useful for amateurs, who usually have not unlimited space at their command, but must make the most of their ground. They must be burnt hard, otherwise the frost will break them.—P. NEILL FRASER.

Belladonna Lilies.—Few plants are more disappointing than these, unless their proper treatment is understood. We have tried to get them to flower planted at the foot of warm walls in several places about the garden, but they invariably refuse to do so, except in one particular spot, and that is against the outside wall of a stove which is always heated. Here they bloom regularly every year. As they come into flower we take

up the bulbs and put them in pots for the conservatory, and as soon as they go out of bloom the bulbs are put back in the same place again. This seems to show that they like more warmth than an ordinary south wall affords. The first flower this season was open on July 27—earlier than ever I knew flowers of this Lily to open before.—J. C. C.

Plants for bog gardens.—In Messrs. Paul & Son's picturesque nurseries at High Beech, Epping Forest, a series of bog gardens have been formed here and there along the margin of a little rill which is sufficient to keep the beds in a moist condition. Mr. George Paul appears to take great interest in these bog plants, and besides planting those that are generally known to thrive in moist soil he has experimented with numbers of others more or less successfully. Some have not flourished well, but there is a long list of successes, amongst them being *Daphne rupestris* (just coming into flower), *Iris Kämpferi*, *Pyrola rotundifolia*, *Parnassias*, *Primulas*, such as *minima*; *Myosotis*, *Calthas* (double), *Dionæas* and *Sarracénias*, *Dodecatheons*, *Gentiana Pneumonanthe*, *macrophylla*, and *Andrews*, *Lobelia cardinalis*, *Lysimachias*, *Mimulus*, *Liatrias* of all sorts, *Mertensias*, *Orchis foliosa*, *Lilies* of the American woods, *Rubus arcticus* and *Chamæmorus*, large American *Cranberry*, *Soldanellas*, *Sisyrinchiums*, *Spireas*, *Thalictrums*, *Trilliums*, and *Violas* of sorts, especially *V. pedata* in variety. In their hardy plant nursery a few miles from Broxbourne Messrs. Paul have also formed a bog garden in connection with the rock garden there, and although only planted during the last spring the plants have progressed well, and the majority of them look as if they will make their home in the moist spot in which they have been placed, but they have to pass the winter, which, if at all severe, will test their powers of endurance. There is a host of hardy herbaceous plants which revel in water during the summer, but which cannot withstand the excessive moisture in winter; hence the test of bog garden plants is a hard winter.

SHORT NOTES.—FLOWER.

Nicotiana affinis.—Is it generally known that *Nicotiana affinis* is a hardy herbaceous perennial? Old plants left out through the winter without any protection are now well in flower.—A. K.

Enothera Lamarckiana.—We were surprised at the beauty of a mass of the cut blooms of this in a large vase in a friend's house the other evening. Its effect seems no less good in the house than it is out-of-doors at night and in the early morning. The value of this Evening Primrose it would be difficult to overrate.

5229.—**The Widow Iris.**—The Iris alluded to is the Snake-head Iris (*Iris tuberosa*), an inhabitant of Southern Italy, where it abounds near Taranto, in Apulia, whence probably it was introduced into Tuscany. It abounds in the Grass lawns of the Boboli Gardens at Florence.—H. J. ROSS, Castagnolo, Lastra à Signa, Italy.

Verbascum phlomoides.—This plant is extremely beautiful, and, as far as we know, little known to the gardening community. It has the stately habits of the largest of its race, with a fine high quality of flower. Some forms are exquisitely fringed and cut, all being good. The flowering runs over a considerable period, and the foliage is handsome.

Propagating Pentstemons.—Now is the best time in the year to take cuttings of choice kinds, as they make fine plants for putting in the open ground by next spring. Young growths which spring from the stem are the best, but any young succulent wood will do. They strike freely in a cold frame kept moist and shaded, admitting a little air every morning for an hour or so.—J. C., *Byfleet*.

Statice Suwarowi.—This plant has disappointed me much both out and indoors, as its neat growth and abundant flower-spikes, arranged candelabrum fashion, promised everything that was desirable. On opening, however, the flowers are of such a dull purplish shade of pink, speedily turning to a leaden hue, that I shall never grow it again until a variety with fresher or deeper tones of colour has been raised and fixed.—E. H. W.

Variegated Convolvulus leaf. I send herewith a leaf each of *Convolvulus* and Japanese Honeysuckle. Wherever the *Convolvulus* plants have come in contact with the Honeysuckle the leaves have become variegated, while plants of the same packet of seeds further off are as usual. Is this uncommon?—M. BARNETT, Holmleigh, Stanstead Road, Forest Hill.

* We have not seen or heard of such a case before. The leaf received is certainly variegated like that of the Honeysuckle (*Lonicera aureo-reticulata*).—ED.

Calceolarias wintered out of doors.

It is but seldom these are to be seen in the state of perfection in which they are this year. In many gardens they have stood out unhurt during the winter, and plants of them may now be met with a yard or more through, forming quite bushes, dense and healthy, and completely covered with blooms. In borders such plants are grand ornaments, and it is quite worth while leaving them out of doors every season to take their chance, as when they do stand they are striking objects compared with young plants, as not only are older ones so much larger, but they flower more profusely and stand the dry weather better as their roots get down deep and they become firmly established. *Calceolarias* being more than half hardy, it would not be much trouble to afford them a little protection. This might easily be done by placing some light non-conducting material, such as Cocoa-nut fibre or half rotten leaves, over the roots and round the collar, and sticking about them a few evergreen branches for shelter. Plants taken up in autumn and potted form good subjects in early spring and summer for the greenhouse and conservatory. There is then, and, indeed, at all times, but little yellow in the way of flowers; therefore, they are the more desirable. Lift them with fair sized balls, pot them in rich loamy soil, and then heavily water them to settle it about their roots; then place the plants in a row close under a wall or other shady position where they can be sprinkled overhead and so have the foliage kept fresh till they again get hold of the soil. For wintering them, there is no place better than a cold pit or house, where they should have plenty of air on all favourable occasions so as to keep them sturdy and strong, and thus fit them for their summer work.—S. D.

Begonia Carrierei.—This *Begonia* bears pure white flowers something in the way of those of *B. semperflorens*, but much smaller in all their parts, and so floriferous is it that with liberal treatment it will bloom continuously for months. Even from cuttings it is constantly necessary to pick off the flowers in order to induce growth. *Begonias* of this class are now much neglected, preference being given to tuberous-rooted kinds; nevertheless many of them are very beautiful, and they may be had in bloom throughout the winter. The following are a few of the best, viz., *ascotensis*, a free, bushy growing kind with pink flowers; *Dregei*, light green foliage, distinct, and flowers small and white; *fuchsoides*, flowers drooping and of a bright crimson colour, habit of the plant free, fitting it for training to a wall or pillar; *insignis* and *Knowsleyana*, free branching kinds, something in the way of *ascotensis*, but different in colour, the flowers of the first being deep pink, those of the second blush. In addition to the above may be named *B. manicata*, a bold kind with lobed leaves and large upright clusters of pink flowers, produced in winter; *B. valida*, another of the same class, but with flowers very much larger and of a deeper pink colour than those of *manicata*, and produced early in the spring; *B. metallica* is handsome from a foliage point of view, and its blush-coloured flowers are also very pretty, and contrast in a pleasing manner with the darker tinted leaves; *B. semperflorens* in its varying shades of white to deep pink is well known and equally effective at all times of the year; *B. nitida* is an upright growing, sparsely branching kind with blush coloured flowers, and *B. Roezli*, another in the same way, has blossoms of a deep rosy carmine tint; *B. Ingrami* and *hybrida floribunda* are a couple belonging to the *fuchsoides* section, but both are quite distinct and well worth growing. For hanging baskets, *B. glaucophylla*, a rambling growing kind, is well fitted, and it flowers freely; nor must *B. weltonensis* be overlooked; though one of the commonest, it is unsurpassed as a summer flowerer. It is grown pretty extensively for market, while the more fashionable tuberous kinds do not find favour with that class of growers, although there are some varieties that might be profitably grown for market, being showy and remarkably floriferous.—ALPHA.

ORCHIDS.

DISA GRANDIFLORA.

I HAVE often been perplexed by the accounts which I have read and heard concerning this beautiful Orchid, and the way in which it is grown at Glasnevin and the neighbourhood of Dublin, and especially by my friend the Rev. F. Tymons, of Baskin Hill, Drumcondra, and a suspicion crossed my mind that it might be a different variety from that with which I have been for many years acquainted. My first knowledge of it was through my friend, Mr. Charles Leech, now deceased, and whose plant as exhibited at the Royal Horticultural Society's Spring Show, some twenty-four years ago, created such a *furor*. I grew it for some years, and then lost it, I believe, through using bad peat. I began its cultivation about six years ago with a clump received from the Plant and Bulb Company, Colchester, and have uniformly succeeded with it. It flowered well, and has increased abundantly, giving me complete satisfaction. This was, however, somewhat discounted when I read of the manner in which it grew at Glasnevin, and when Mr. Tymons gave his account of it in a contemporary, I was perfectly amazed at the growth of which he told, the height of the flowering stems, &c., more especially as in detailing his treatment I could see no difference between his mode of culture and my own, and so on a late visit to Dublin I determined to investigate it. I saw the plant at Glasnevin, at Mr. Tymons', and at the College Botanic Gardens, and I was at once struck with the difference in growth; they were much more vigorous, the stems were much redder and were evidently on the way to reach a much greater height than mine. I inquired at Glasnevin if they had any other variety. Yes, they had, but could not find it. Mr. Tymons had one pan which looked like mine, but the remainder of his stock had come originally from Glasnevin, and on talking the matter over with Mr. Burbidge, he said, Oh, yes; there is no doubt a different and inferior variety.

THE BLOOMING SEASON having come and my plants being in flower, I wrote to Mr. Moore at Glasnevin and asked him to be kind enough to let me have a flower: this he has done, and I now forward it to you, with a bloom from my own plant. You will see that the Glasnevin variety is inferior in every way, in the size and width of its sepals, and in the brightness of its colouring, and indeed compared with the other I should say not worth growing. I may say that I saw the same variety the other day at Sir Trevor Lawrence's. It is a somewhat curious thing that although the *Disa* is confined to one spot on the earth's surface, so far as we know, that yet two varieties so entirely different should be found; the one I grow has been, I believe, called by Mr. B. S. Williams *superba*.

CULTURE.—With regard to this, it is of the easiest description possible. It requires no artificial heat. Mine are grown in an ordinary greenhouse from which frost is excluded. As soon as the stems die down they are repotted into peat in large lumps and charcoal in pieces about the size of a Walnut, and with plenty of drainage. They are placed near the door of the house where they have abundance of light and air, and are syringed three or four times a day. They do not seem to care how much water they get provided the drainage is good. Some cultivators have recommended Sphagnum, but I have never used it, and having succeeded so well without it I think it best to let well alone. DELTA.

Epidendrum nemorale.—This Orchid possesses much to recommend it. The light airy growth of the plant, the delicate beauty of its flowers combine to render it a most beautiful Orchid, and the more desirable, inasmuch as it habitually flowers at this season when the Orchid-flowering season is almost at its lowest ebb. The flowers are some 4 inches across, of a rather deep lilac colour, and are produced in a branching panicle

terminating a long slender stem, which gracefully droops under the weight of the flowers. It lasts in bloom a long time if kept in a cool and dry house. It is a Mexican species of free growth in an intermediate house. A fine specimen of it in flower may now be seen in Messrs. Shuttleworth and Carder's nursery, at Clapham, where, among other interesting Orchids in flower, may be found *Burlingtonia granatensis* with drooping spikes of deliciously scented white flowers, *Dendrobium Falconeri*, various interesting *Masdevallias* and *Odontoglossums*, and an uncommonly fine dark variety of the new *Cattleya Gaskelliana*.

Another giant Cattleya.—There has been put up for sale at Stevens' Rooms, Covent Garden, during the week a huge plant of *Cattleya Skinneri* just received direct from South America. The mass measures about 7 feet across and is 20 feet in circumference. It is a complete mass of bulbs all in good condition, and is a rival to the giant *Cattleya* which Messrs. Sander & Co. have at their nurseries, at St. Albans. A plant of the white variety of *C. Skinneri* was sold during the week for twenty-five guineas.

Vanda Batemanni.—We do not remember having seen such a high coloured variety of this noble *Vanda* as that sent to us by Mr. Kemp from Mr. Graham's garden at Dunlop, Stewarton. The flower measures $2\frac{1}{2}$ inches across, the sepals being bright yellow profusely spotted with cinnamon on their inner surfaces, while their exteriors are of a bright purple-crimson. The lip is also purple-crimson, but of a very deep shade. Mr. Kemp states that the plant from which the flower was cut bears a spike 4 feet long, and furnished with some fifteen flowers.

Odontoglossum vexillarium Cobbiana.—The delicate and almost colourless blossoms of this variety render it very beautiful, and on account of its rarity it is much sought after. One may flower thousands of imported plants without securing one with such pale flowers as this variety possesses. There is only a faint dash of rose-pink in the centre of the lip and a few streaks of yellow to mar the purity of the otherwise white flowers. A plant of this variety is now in bloom in Messrs. Shuttleworth and Carder's nursery, at Park Road, Clapham, where there has lately been in flower an absolutely pure white *O. vexillarium*, without a trace of colour save the few radial lines in the centre.

Cypripedium selligerum majus.—There is a wide difference in point of size between the flowers of the large variety of this hybrid *Lady's Slipper* and the typical form. We have just received some specimens of both from Mr. Graham's gardener (Mr. Kemp), at Dunlop, Stewarton. The spike of the original form sent carries three flowers; the major variety has only one on a spike. Whether the major form ever carries many flowers on a spike we have not observed. The two forms also differ in colour; in the major form the lateral sepals are spotless, while those of the original are copiously covered with shining wart-like dots, as in *C. lævigatum*, which, with *C. barbatum*, are the parents. Considering the difference between the two forms, it is doubtful if both have really the same parentage. Both are handsome plants, vigorous growers, free flowerers, and remain a long time in perfection. Mr. Kemp also sends a twin-flowered spike of *C. niveum* and a flower of *C. superbium* from a plant bearing half a dozen blossoms.

White Cattleya Gaskelliana.—A four-flowered spike of a most lovely variety of *Cattleya Gaskelliana* has been sent to us by Mr. A. Curle, of Melrose. This variety is the counterpart of that shown by Mr. Crawshaw a few weeks ago, and which was awarded a first-class certificate at South Kensington. The flowers are $7\frac{1}{2}$ in. across the sepals, which are $2\frac{1}{2}$ in. broad. The sepals are pure white, but the broad shallow lip has just a faint blot of carmine-magenta on the lower part and a dash of yellow in the throat. The flower is therefore almost pure white, and might be appropriately named *alba*. The plant from which this spike was cut was an imported

piece last year bought of Messrs. Thomson, of Clovenfords, who had no idea that the plant was of the white variety. Such a fine spike from a one-year imported plant indicates skilful culture. Another example of this superb *Cattleya* comes from Mr. Aven from his nurseries at Northwich. This flower is larger than Mr. Curle's, being $9\frac{1}{4}$ inches across, but the sepals are not nearly so pure, there being a decided suffusion of pink in the sepals and lip, but for all that the flower is scarcely less lovely than the pure white sepalled variety.

THE WILLOW-LEAVED VERONICA. (*VERONICA SALICIFOLIA*.)

FOR mild seashore districts the various shrubby *Speedwells* from New Zealand and Tasmania are important garden plants. Some of the species are now becoming tolerably common; for example, there is scarcely a commoner plant in the garden along the south coast, and particularly in the Isle



Flowering twig of *Veronica salicifolia*

of Wight, than *Veronica speciosa* and its fine dark variety *imperialis*. *V. Traversi*, too, is one of the best of Evergreens, and so hardy as to thrive unprotected even in the midland districts. One of the least common, though among the earliest introduced, is *V. salicifolia*, of which the annexed drawing represents a small flowering twig. It is an extremely elegant and pretty plant, the flower-spikes being pure white and feathery looking on account of the numerous protruded stamens. The spike represented is only a moderate sized one, the largest being fully twice as long. The specimen from which the drawing was made was sent to us by the New Plant and Bulb Company, in whose nurseries at Lion Walk, Colchester, it has stood unprotected during the past three years; therefore it is presumably hardy enough to withstand our average winters. It would be interesting to know what its behaviour would be during such a winter as that of 1879 and 1880. In a garden in some mild locality, such as in Mr.

Ewbank's at Ryde, one might make a most interesting collection of the various New Zealand and Tasmanian *Veronicas*. Some are showy as well as elegant in growth, and not a few are highly curious. We saw a species the other day in the Edinburgh Botanic Garden which was so much like a small *Retinospora*, that we actually thought it was one until we saw the label.

NOTES OF THE WEEK.

Royal Horticultural Society.—A cottagers' fruit and vegetable show is to be held next Tuesday at South Kensington in connection with the Health Exhibition. The usual meeting of the fruit and floral committees will take place on the same day.

Sale of Orchids.—The third portion of Mr. Bockett's Orchids was sold at Frotheroe & Morris' rooms on the 1st inst. There were about 300 lots, and some of the choicest plants fetched good prices. Twenty-one guineas was the price of *Phalenopsis Portei*, *Cattleya exoniensis* went for 18 guineas, *C. gigas Normanii* for 12 guineas, *Cypripedium Fairrieum* realised 19 guineas, and 7 guineas were given for *Lelia anceps Dawsoni*, and £10 for *Dendrobium Griffithianum*.

Witley Court.—We hear that Mr. Austen, who has so long managed Sir Greville Smythe's garden at Ashton Court, Bristol, is about to take charge of the Earl of Dudley's garden at Witley Court. Mr. Austen is so well known as an able gardener and successful exhibitor, that all must wish him success in his new sphere. The other day a party of friends in the neighbourhood of Bristol presented him with a handsome Oak side-board and an album.

A new fruit.—The *Revue Horticole* in its number for August 1 gives a coloured plate and detailed description of the interesting new bush fruit called *Phyllocalyx edulis*, a native of Brazil, where it is sparingly found growing in the sandy soil on the seashore in the province of Rio. Its native name is *Pitangatuba*, and the fruit is said to be about the size of a Walnut, of the colour of an Apricot, but with deeply depressed channels down its sides. The flesh appears to be yellow and exhales the penetrating aroma of the Pine-apple. In the centre is one white kernel resembling an Almond. It is said to fruit in quite a small state, and apparently will need in this country only the protection of an orchard house, as it has fruited for the last two or three years in the cool greenhouse at Segrez, in the late M. Lavallée's garden.—W. E. G.

Variegated trees and shrubs.—Specimens of a few variegated trees and shrubs have been sent to us from Messrs. Cripps' nursery, Tunbridge Wells. The most noteworthy of these are *Castanea vesca aurea*, a form of the Spanish Chestnut with the leaves bordered and mottled with greenish yellow. It is highly effective when planted in association with other trees. *Cornus sibirica variegata* has leaves conspicuously margined with creamy white, and the golden form of *Jasminum nudiflorum* also sent is remarkable for the persistency of its golden hued foliage, and is a capital shrub for walls, screens, and the like. Another notable fine-foliaged tree sent is *Prunus Pissardi*, the deep purple-crimson-leaved variety of *P. cerasifera*, which no doubt will prove an extremely ornamental object when it becomes fully developed. The variegated oval-leaved *Privet* (*Ligustrum ovalifolium elegantissimum*) is likewise worth special mention.

Hutton Hall.—We hear from Mr. McIndoe, the gardener at Hutton Hall, Guisborough, that Sir Joseph Pease has opened his gardens to visitors. In addition to the attractions of this large and well-kept garden, there are various places of interest in the neighbourhood. The top of Roseberry Topping is within an hour's walk, with a good footpath the whole way. On a clear day a view is obtained of the Yorkshire hills to the south and west, including the upper valley of the Tees, and the whole of the Tees Bay, Hartlepool Hough, and Sunderland to the north. The "Hanging Stone" is at the end of the southern ridge of the Hutton valley. Around it are the remains of ancient British habitations which can be easily traced even when covered by the growth of Fern. The hothouses, conservatories, and gardens are

open to visitors, and the only restrictions are that they are not to smoke or walk upon the lawns or Grass edges of the walks, and when in the woods not to leave the paths. They are also asked to protect the flowers, and not to gather the wild flowers and Ferns. They are allowed to have picnic parties and even a tent is pitched in a convenient situation to afford shelter in case of rain.

Fruit crops, returns of which through the courtesy of our correspondents we are enabled to publish this week, with one or two exceptions, are fairly good this year, notwithstanding the severe frosts which occurred late in April when the trees were in bloom. The exceptions in question are Plums and Pears, both of which are thin in most districts; but even Plums are not quite so bad a failure as last year. Peaches and Nectarines are good where protected. Of the two, Nectarines are the better crop, a singular circumstance, seeing that the Nectarine is but a "sport" from the Peach, both being sometimes found on the same tree. Cherries have failed in some places; in others they are a moderate crop, especially the Morello. Apricots set their fruit plentifully, and it was well advanced when the frost came; nevertheless, they are in many places by no means a full crop. The Apple crop, though partial, is, on the whole, good. In some places there is scarcely a fruit, while in others the crop is much above the average; but in such cases the fruit individually is small. The late varieties are the best. Strawberries have been a heavy crop, especially those on moist, clayey soils; but owing to the heat of the weather they were soon over. Amongst late sorts Frogmore Pine and the Elton have been good, but the latest of all are the little alpine—red and white—which do well scrambling over a rocky mound, and also on a terraced bank facing the north; but so situated their fruit is not so good in flavour as that borne by plants in a more sunny position. Currants—Red, White, and Black—have been heavy crops, especially the last, but the trees are much blighted. Good samples of Black are now realising 4s. per half sieve. Gooseberries are a good crop, though in some places the young fruit was frozen through. The Warrington, one of the best late Gooseberries grown, the branches of which are naturally pendulous, and thereby protect the fruit, has been everywhere well loaded with berries of good size and quality, *i.e.*, where over-pruning has not been practised; where the trees have been hard-pruned the fruits have been thin. Up to the middle of April there were abundant signs of a great fruit crop this year but from the 20th of that month to the second week in May the hopes entertained earlier in the season were shattered by the thermometer repeatedly indicating from 15° to 20° of frost. The wonder, therefore, is that there is any fruit at all. Our best crop, with the exception of small fruits, is perhaps the Apple, a great gain, as no other fruit is so much used in the way of food. The best bearers are the Codlins, Alfriston, Cellini, and Lord Suffield, the last the best comparatively new culinary Apple that has been added to our list for years, a fact worth remembrance when planting time comes round. It is large, even on the surface, and therefore capable of being pared without waste. As to Plums, that which is most reliable is the Victoria.

A NEEDLESS HORROR.

SIR,—Might I ask you to publish this letter? From being a weak advocate for cremation, I have become an ardent and strong admirer of it, owing to the following circumstances:—

I attended with my wife last week at a cemetery in London the burial of a relative, and on arrival at the grave was horrified at the awful stench which emanated from it. Five other relatives are laid in the same grave, which is not bricked; and so much earth was removed that the inscription on the plate of the coffin which had been placed there three years ago was distinctly visible. The other bodies must have been there six or seven years, having been transferred from a vault where they had been deposited about twenty years ago. Ever since this burial my wife has been far from well, in consequence, so my doctor says, of the awful stench referred to.

Your space is valuable, and I will not trespass upon it; but I think all such occurrences as the above should be made known, especially at the present time, when there is a chance of our being visited by the cholera, to avoid which in the future cremation would appear to me to be one remedy.—FERNAN DE AYALA, in *The Times*.

INDOOR GARDEN.

CHOICE INDOOR RHODODENDRONS.

THE few Rhododendrons that I propose here to notice do not belong to the hardy class, but are for the most part hybrids of Himalayan kinds that flower freely in a small state, and which may be used under glass where space is limited, as well as in some of the more roomy structures. For beauty of blossom few surpass that handsome kind called Countess of Haddington, a hybrid between *R. Dalhousiae* and *ciliatum*. The blooms when first expanded are pale pink, but after a few days they become almost white. It is unlike either of its parents in habit, as *R. Dalhousiae* is of straggling growth, and *R. ciliatum* forms a low bush, while the Countess of Haddington is of a bold free-growing character, well suited to show off its handsome flowers to the best advantage. As a proof of its free-flowering property, I may mention that a small plant in a 6-inch pot bore with me five large clusters of bloom. The next kind (*R. Sesterianum*) is of Continental origin, the result of a cross between *R. formosum* and *Edgeworthii*. It is of somewhat slender growth, and to induce it to form good bushes it should be stopped pretty freely when young. In this kind the flowers are very open in shape, pure white with the exception of a tinge of yellow in the centre, and with the edges of the petals prettily fringed. This kind seeds freely, and as its parents readily intercross with each other, numbers of seedlings have been raised from time to time in general characters much like *R. Sesterianum*.

THE MOULMEIN *R. VEITCHIANUM* has been brought more prominently forward within the last two or three years than heretofore, and no wonder, for in my opinion its blooms are, as regards beauty, surpassed by no other Rhododendron. They are large, widely expanded, and borne in such profusion that the plants appear to be quite covered with them. The petals are white, with the exception of a greenish yellow flush in the centre when first expanded, and they have a massive wax-like appearance. In some the edges of the petals are beautifully crisped, while in others they are almost smooth. What is regarded as the typical *R. Veitchianum* has crisped petals, while the smooth flowers belong to its variety *lævigatum*. This Rhododendron flowers as freely as the rest when young; but it is not easy to obtain dwarf bushes in small pots, as it has a tendency to grow at first straggling, but when it gets larger that character is outgrown, and as a good-sized bush its habit is all that could be desired.

Having struck a great many cuttings of the varieties herein enumerated, I may mention that this kind is more difficult to root than any of the others. Between *R. Veitchianum* and *Edgeworthii* was raised *R. Fosterianum*, a very desirable sort in habit, and much like the many hybrids of *Edgeworthii* that have been raised, but with flowers partaking somewhat of the character of those of *R. Veitchianum*. The centre of the flower is tinged with pale lemon, and it is agreeably scented.

R. PRINCESS ALICE—the result of a cross between *ciliatum* and *Edgeworthii*—blooms freely in all stages, the light-tinged blossoms being also very fragrant. One of the most useful kinds that we grow in a small state is *R. multiflorum*, a much-branched, dwarf, bushy sort, with deep green leaves and pale mauve-coloured flowers, borne in compact clusters. This Rhododendron is quite hardy, but well worth pot culture, inasmuch as it makes pretty little plants, masses of blossom, in 5-in. or 6-in. pots, and some large specimens yield a handsome return in the shape of cut bloom where flowers of this kind are valued. The tubular-flowered sorts of the *jasminiflorum* and *Princess Royal* class must be included in any selection however choice, but they may be more correctly defined as perpetual bloomers, for if treated with that object in view, flowers of them can be had at almost any time of the year. Though beautiful when in bloom, most of the Himalayan species re-

quire a considerable space in which to develop themselves. They do not flower freely in a small state; therefore for pot culture they are scarcely adapted, being, in fact, better fitted for planting out in some large structure, such as may be seen in the temperate house at Kew, where every recurring season they are objects of great beauty and interest. Our Rhododendrons of this class are plunged out of doors during summer, the result being short, well-ripened growth and plenty of flower buds. Considerable care is needed when outside to see that they do not get too dry at the root, for when that occurs the foliage assumes a sickly tint, which detracts greatly from the beauty of the plant. The *R. jasminiflorum* and *javanicum* hybrids give greater satisfaction when kept under glass at all times than when turned outside during summer. T.

Veronica Hulkeana.—The delicate mauve-tinted flowers of this New Zealand *Speedwell* render it a very attractive plant in the greenhouse during spring. They are produced in great abundance, and in colour are very distinct from those of any of their associates. The wonder is that this beautiful *Speedwell* is not more extensively grown than it is, for it is equally floriferous whether in the form of small plants in 6-inch pots or in the shape of larger specimens. The tall branching spikes are very useful in a cut state, as they last a long time in good condition in water, and have a light and elegant appearance. It is a plant of the easiest culture; indeed, in several parts of England it is quite hardy, as are also many other natives of New Zealand. *V. Hulkeana* can be readily increased by cuttings or seeds, which under favourable conditions ripen freely.—H. P.

Neriums, or Oleanders.—We seldom find these flowering freely. Many say they have grown them for years and never have had an expanded flower. They show bloom-buds, but they drop off. That there is no difficulty in growing the Oleander is too well known to need comment, for good plants of it may be found in all sorts of receptacles that will hold soil together. It therefore appears to me that the buds drop from want of nourishment just when their flowers begin to swell. If, therefore, the pots or tubs in which the plants are growing were plunged so as to prevent too rapid evaporation, and a little manure water is given, the flowers would expand. Oleanders are evidently moisture-loving plants—in fact, semi-aquatic, and I find that if the pots are set in large pans kept filled with liquid manure, the flowers attain a great size. They also enjoy a rather high temperature, but, as before stated, they will live under almost any conditions, even in the open air. I would, however, advise anyone who wishes to flower them to keep them under glass, give them a light sunny position, and be sure that the roots are never dry at any time. A good drenching of tepid water overhead does them good, and they must be kept clear of scale and green fly. Thus treated they will be found to flower freely.—J. GROOM, *Hants*.

Spiraea palmata in pots.—The common white-flowered *Spiraea japonica* has long been a popular pot plant, as well it may, for it can be had in flower at any time from Christmas till June; though, of course, in winter severe forcing is needed, and for midsummer blooming it may be necessary to retard it somewhat by keeping it in a shady position as the season advances. *Spiraea palmata* under the same conditions will not flower so early; indeed, it is seen at its best about June, though it may be forced much earlier. It is invaluable for conservatory decoration, its bright crimson flowers being admired by everyone. Our plants of it received liberal treatment, the result of which was fine, plump, well-ripened crowns. They were potted up during the winter in the same way as the white-flowered *Spiraea*, and were afterwards kept in a cold frame, just to protect them from frost. When starting into growth, they were shifted to the cool end of the forcing house, the result being a fine display of bloom much sooner than those out-of-doors. Like its commoner relative, this *Spiraea* needs a copious

supply of water when growing, and is benefited by a little liquid manure occasionally.—H. P.

EPACRISES AND THEIR CULTURE.

THE coloured plate of Epacris which recently appeared in THE GARDEN reminds me of days past, when a great portion of my time was spent amongst these charming plants, and when they, as well as Cape Heaths and the so-called hard-wooded greenhouse plants, generally were so highly esteemed as to be considered indispensable in gardens of all pretensions. Of some kinds we never had enough; such, for instance, as *miniata splendens* and *grandiflora rubra*, for if by chance a few young plants remained unsold and were shifted, they rarely came into 8-inch pots before finding purchasers. Many thousands of cuttings were annually put in, and these were mostly sold when in a flowering condition in 4½-inch pots, a large proportion going into the north of England, where Cape Heaths and plants of a kindred character some twenty years and more ago were much thought of.

OUR PROPAGATING HOUSE was a lean-to, not more than 40 feet in length, but some ten thousand cuttings of *Ericas* and Epacris were struck therein in the course of a year. It was heated by a flue which ran round it; in front there was a stage, and the centre was occupied by a brick pit filled with tan, in which the pots were plunged to the rims. The upper shelves near the glass were occupied by double Primulas, and remarkably well they did there, flowering all the winter through; indeed, from one end of the year to the other there was always some bloom to be had from them, as young plants were continually being propagated. The propagator was, as may be supposed, an experienced hand; indeed, he was one of the very first to successfully increase the hard-wooded section of Cape Heaths, having been propagator to the Messrs. Fairbairn, who in their day were the largest and best Heath growers in the world. He made a point of taking his cuttings from the healthiest and strongest plants, an infinite amount of pains being taken in the insertion of them. As they were made they were dropped into a 4½-inch pot, inverted on a wet cloth, so that there was no possibility of becoming in any way flagged. Then they were inserted in 6-inch pots one-third full of drainage, filling up with finely sifted sandy peat to within 2 inches of the rim, finishing off with silver sand up level with the rim of the pot. Covered with a bell-glass and plunged in the tan bed, they remained there until they were rooted.

EPACRIS CUTTINGS are a long time rooting, and a large amount of care and patience is required before they come to be plants. Three things are most important, viz., never to let the sun shine on them, never to let them get dry, and never to water overhead. They do not require watering often, and then a little water poured on the bell-glass, and which soaks in between it and the pot, sufficiently moistens the soil. When young growths began to push from each cutting the pots were removed to the side stage, and a process of inuring to the ordinary atmosphere commenced, which ended by the complete removal of the glasses. There was no absolute rule as to the time of potting, but it was generally commenced at the turn of the year, the young plants being put separately into 2½-inch pots, and when established they were later on removed to cold frames. From January to May there was always something to be done in this way, for as soon as half a dozen pots of cuttings were sufficiently rooted they were at once potted off, so that no time might be lost. The soil for these small plants was sifted very fine, and the pots, if old ones, were washed as

clean as possible. In the frames they grew during the summer, being stopped occasionally to make them bushy, getting plenty of air with occasional exposure, and some shade from hot sun. By the autumn they had grown into sturdy little plants with the pots filled with healthy fibres, and then they were fully exposed to the open air both night and day and to the full sun.

SHIFTING commenced in March, and was continued through that month and April. Only the best Wimbledon peat was used, and this was broken to pieces by hand (it was never chopped nor cut with a knife), about one-sixth of coarse silver sand being added to it. The whole of the stock was grown in frames, being kept rather close for a time after potting to encourage root action, but afterwards getting plenty of air and thorough exposure as soon as growth ceased. Nothing approaching coddling was ever practised, and to this and the use of good peat, with strict attention in watering, was attributable the great success which invariably attended the culture of Epacris in that establishment. These plants were grown there with seemingly as much ease as the commonest soft-wooded plant, and when I now hear them spoken of as not being of easy culture, I think of that time when growing Epacris appeared to be one of the easiest affairs imaginable. The second year saw them well established in 2½-inch pots, but they were not, of course, allowed to flower in them, the lead-

a moist condition whilst avoiding overwatering. There is a considerable range of colour amongst Epacris, varying from pure white to almost scarlet. Some of the flesh tints are very lovely, and the bright coloured ones which bloom in winter are very attractive. As a

WINTER FLOWERING PLANT, I do not think that Epacris are sufficiently valued; they give bright colour when the days are dark and are useful for cutting. *Ardentissima* I consider to be one of the best of the bright-coloured kinds, but *Vesuvius* and *Viscountess Hill* are fine showy varieties. Amongst the whites, *hyacinthiflora candidissima* stands pre-eminent for purity and size of flower; it should be in every collection, as should the double variety of *onomæflora*. *Alba odorata* is also a good kind, and very free flowering. The finest of all the family is, however, considered to be *miniata splendens*, but there is a spurious variety of this, much inferior in colour, and which I think hardly worth growing. I hold *grandiflora rubra* to be the showiest of all, and one of the finest flowering plants grown; but to thoroughly appreciate it, grow it into a good specimen in an 8-inch pot, and then you will say it has few equals as a decorative plant.

J. C. B.

TINNÆA ÆTHIOPICA.

A PRIVET-LIKE shrub, which bears almost all the year round numerous crimson-maroon flowers, with a green bladdery calyx and a delicious Violet-like fragrance, are the most prominent features by which this African Labiate is distinguished as a garden plant. The Shrub Violet we might call it, for though in appearance the flowers of the *Tinnæa* do not bear a close resemblance to a Violet, there is no plant known to us the odour of which is so similar to that of Violets as are the flowers of this. One plant in a large stove emits odour sufficient to permeate the whole house, especially in the early morning. The flowers of *T. æthiopica* are pretty as well as fragrant, a well-grown plant of it producing quantities of pendent, crimson lipped flowers, which last for several days. The annexed woodcut shows the character and habit of a small flower-spray, but gives no idea of the appearance



Flowers of *Tinnæa æthiopica*; flowers deep crimson (natural size).

ing shoots being stopped during the early part of the growing time. This treatment naturally produced fine stocky little specimens full of restrained vigour, and which the following year, when they were shifted into 4½-inch pots, declared itself in the production of from six to a dozen good strong flowering shoots. Plants of this description which remained unsold were cut down, and when they started into growth again were shifted into 5-inch and 6-inch pots, according to their strength. They of course made a fine show of bloom the following year. During the winter Epacris should be kept as cool as is compatible with their safety. They bear a slight amount of frost better than confinement. Nearly the whole of the stock in the establishment here referred to was wintered in cold frames, the back and front of which were protected by some 6 inches of Fern stuffed in tightly between a framework and the boards, and covered with mats, and in very sharp frosts with an additional layer of Fern. In spite of these precautions I have seen the surface soil of the pots hard frozen, and yet the plants suffered no injury. Too little air and too much warmth will surely enfeeble their constitution, and if placed too far from light or crowded with other plants the lower foliage will be certain to drop, and this will also happen if watering is neglected; if once the foliage becomes shrivelled no amount of attention afterwards brings it round again. The great point during the resting period is to maintain the soil in

borne by a well-flowered specimen. *T. æthiopica* grows freely in a warm moist house. It may be propagated by means of cuttings at any time of the year. It is, however, for its fragrance that we recommend this plant as worthy of general favour. A variety with small, thick, toothed leaves and darker flowers has been recently introduced into cultivation by means of Kew, and is called *T. æthiopica* var. *dentata*. The fragrance of the flowers of this variety is quite as strong and sweet as are those of the type. It would seem almost superfluous to urge the claims of a plant possessed of a strong Violet aroma, but looking at the time this plant has been in cultivation (it was introduced in 1865), it is surprising how rarely it is to be met with in gardens.

B.

COPROSMA BAUERIANA VARIEGATA.

HALF-HARDY or greenhouse shrubs possessing the bright glossy beauty and rich variegation of this New Zealand evergreen are not at all numerous, and though generally employed with good effect in summer in leaf or tapestry beds out-of-doors in contrast with *Alternantheras*, yet this *Coprosma* is equally useful indoors as a pot plant. It is a plant of easy culture. It grows well in any good compost in which turfy loam is the chief ingredient; the drainage must, however, be good, and watering must be done with care. We have more than once lost fine plants of it through reckless watering; it cannot endure stagnant moisture

about its roots. As a pot plant it is peculiarly well suited for growth as a standard, being naturally of a drooping habit, and in that form it is very serviceable for conservatory embellishment; 4 feet is a very good height for the stem, which must be trained to a stake. When sufficient height is gained pinch off the terminal end of the leading shoot, and also gradually remove all side growths from the bottom, but leave nearly a foot of stem at the top, whence side shoots should be encouraged to form the semi-pendulous head. Very little subsequent attention will be needed beyond nipping the points out of the strongest growths and keeping all sides of the plant equally exposed to light. By shifting into larger pots when needful and watering carefully handsome plants may be obtained in three seasons.

FOR VASES out-of-doors in summer, for room decoration at any time, or for the ordinary greenhouse stage, the best form is that of a natural bush. This may be secured by repeated pinchings of the strong shoots, or if it is desired to give the plant a loosely pyramidal shape, these strong growths should be looped up to a stake placed in the middle. Side growths break freely from every joint, and a useful and handsome decorative plant is in time the result. The bright colours of this shrub—deep green, with broad, creamy, marginal variegation—are well defined; therefore the plant looks well under artificial light, and it may be used with good effect in dinner-table decorations associated with any dark foliaged plant, such as the deep red velvety Gesneras. For this purpose little spreading plants, grown in 2½-inch pots, having several growths are most convenient. Fasten a little fresh green Moss round the pots with a bit of bouquet binding wire, and place them on the cloth in default of suitable small receptacles in which to place the pots. Another purpose for which I think this plant eminently adapted is planting it out to cover a pillar, or pier, or a bit of wall in the conservatory. I mean to try it in this way, for which its habit seems well fitted, and, like other plants, its health and longevity would doubtless be increased by being planted out in proper, well-drained soil.

THE PROPAGATION of this *Coprosma* is not difficult; where good numbers of it are wanted, it is well to keep a few bushy old plants to get cuttings from, which they will yield for years. Put them in the warmest place available early in spring; they will soon push young shoots in abundance, and these in their soft state root readily with us in a forcing house without the pots being plunged in bottom-heat; the cuttings are inserted in very sandy peat, well watered, and carefully shaded from the sun. Cuttings of a harder and more woody character, taken from out of doors in autumn, strike in heat very reluctantly; they must be rooted by a slower process, as, for instance, in a close, cold frame. Spring propagation is best. This plant enjoys a special immunity from insect pests.

Cranmore. A. MOORE.

DRACÆNA GOLDIEANA FROM STEM CUTTINGS.

THIS *Dracæna* is not so graceful as some others, but, nevertheless, when well grown it is a noble looking plant, and very effective. It was stated in THE GARDEN, in February last, that stem cuttings of it would not strike, a statement which I am able to contradict, for out of five pieces put in as stem cuttings I have three established plants in 4-inch pots. It does not, I admit, strike so freely as others; in fact, it takes double the length of time to strike that they do. A great quantity of stem cuttings of other varieties which I put in were struck and established in 3-inch pots some time before those of *Goldieana* made any signs of growth, but side shoots of this *Dracæna* taken off with a heel strike as readily as those of other varieties. In January last I had some long leggy plants of *Dracænas* with good crowns of leaves, and rather than run the risk of losing several of them by taking off the crowns and putting them in as cuttings, incisions were made immediately below the leaves; some wet Moss, sand, and leaf soil well chopped up and mixed together were

bound tightly about the incisions. Some of the plants thus operated on were moved to the forcing pit; others remained in the plant stove. Those in the forcing pit rooted nearly a fortnight before those left in the stove. *D. Goldieana*, which was amongst those left in the stove, was quite a month behind any of the others. When the Moss was well filled with roots the crowns were severed from the stems below the incisions and potted in small 5-inch pots; a stake was placed to each plant, and the leaves were tied up loosely to it. They were then placed in the propagating pit and syringed two or three times a day, when they soon established themselves, losing scarcely a leaf. Some of them are now from 2 feet to 3½ feet high in 6-inch and 8-inch pots, and are well furnished with fine, healthy leaves from the rim of the pot to the top of the plants. This method I consider preferable to any other, one great advantage belonging to it being better and larger plants. They can also be grown in smaller pots than when otherwise propagated, rendering them more serviceable for decorative purposes. I may add that in these operations I had not a single failure.

Arle Court, Cheltenham.

GEO. HARRIS.

WHITE-FLOWERED PELARGONIUMS.

WHEREVER a supply of cut flowers has to be maintained, there is always a far greater demand for white blossoms than for those of any other colour; therefore a few notes on the best of that class in the way of *Pelargoniums* may not be without interest. For convenience sake they may be divided into groups, taking first those with close erect trusses of flowers, some pure white, and others slightly feathered at the base of the petals. The varieties in this class are all of Continental origin, as their names will show—viz., *Lucie Lemoine*, *Madame Charles Kœnig*, *Madame L. Harmant*, *Madame Marie Knecht*, and *Ouida*. Of these the two first-named are the best, and of the two *Madame Charles Kœnig* bears the palm. In this there is just enough faint pencilling at the base of the petals to be discerned on close examination, but to all intents and purposes it is a pure white flower; *Lucie Lemoine* has more pronounced markings, but even in this case the amount of colouring is but slight. We find *Madame Charles Kœnig* to be very useful for winter flowering; it will yield a great quantity of cut blooms at that season when they are so valuable as well as in the summer. Another group of light flowers with crimped or fringed edges, and of more sturdy growth than the last, are of English origin; they consist of *Duchess of Bedford*, *Duchess of Edinburgh*, *Countess of Rosebery*, *Royalty*, and *Maid of Kent*. The best of these I take to be *Duchess of Bedford*, a sport from that good old market variety, *Digby Grand*, and, like its parent, largely grown as a pot plant for market purposes. The petals are white, and the two upper ones marked slightly with rose. My other selection is *Maid of Kent*, a remarkably floriferous variety, but scarcely so free in growth as the last named. The flowers possess more substance than any of the others, and the whole truss is bold and striking. Each petal of this is marked at its base with rosy pencillings. Were *Maid of Kent* as stout and sturdy in habit as *Duchess of Bedford*, it would be unhesitatingly my selection, but as a set-off to the superior flowers of this variety we have the less desirable habit of growth. For cut purposes it is well suited, as the trusses are compact and the flower-stems stout and erect. An old show variety named *Claribel* has flowers of the purest white, with a small spot on the upper petals, and for growing into large specimens it is a very desirable kind; but when cut it is not so good as some others having crimped and fuller flowers in the decorative class. The pick of white fancy *Pelargoniums* I take to be *Princess Teck*, a compact and very floriferous kind, with pure white flowers, slightly spotted with carmine. Double or semi-double flowers are but little represented in these classes. The first with which I became acquainted was *album plenum*, but it was not free enough in

growth to become popular. Then, two or three years ago, *Belle de Jour*, sent from the Continent, received a certificate from the Royal Horticultural Society. It is a pretty kind, with large open trusses of pure white flowers, that do not expand in a mass as *Pelargoniums* commonly do, but keep opening in succession for some time. The blooms are large, and well suited for using singly in a cut state, as they last long in good condition. A great drawback to this *Pelargonium* is, that in habit it is far from desirable; if not stopped freely, the shoots run up very tall, and when pinched back they sometimes refuse altogether to break again, or frequently, even if they do so, a single shoot only is produced; so that the plant under both modes of practice is in no ways improved. A couple of other kinds are *Jeanne d'Arc* and *Madame Bouchardat*, both with blush-coloured blossoms, and much resembling each other. They are of free growth, but dwarf and very floriferous, so that one finds them very useful for cutting from.

H. P.

***Zenobia speciosa pulverulenta*.**—As a flowering plant under glass, this hardy shrub (of which a coloured plate was given in THE GARDEN for December 29 last year) is extremely attractive both from its large Lily of the Valley-like flowers, and also on account of the bluish silvery tint of its foliage. Out-of-doors it shows its colour well in a moist, peaty spot, but under glass the peculiar tint of the foliage is, if possible, more pronounced. Hardy plants of this character are extremely useful, as they do not occupy space under glass during winter, but may then (unless needed to be in bloom unusually early) be kept out-of-doors. After flowering the plants should be plunged in the open, and care taken to keep them well supplied with water, otherwise a crop of flowers the following season need not be looked for.—ALPHA.

***Dipladenia boliviensis*.**—Though less showy than most of the hybrid *Dipladenias* now commonly grown, this is a pretty, chaste kind, and withal possessed of a good vigorous constitution that fits it for employment as a stove climber where the more delicate sorts might not succeed. Its blooms are smaller than those of most of the others and less open in shape; in colour they are a beautiful clear white, relieved by a central blotch of orange. It is by no means of recent introduction, and may well be classed among neglected plants. From no list of select stove climbers, however, should it be omitted, as besides the desirable qualities just alluded to, it is very free flowering. Cuttings, too, of it root more readily than those of the others; indeed, a stout stem secured to a damp wall pushed forth roots along that portion of it that was immediately in contact with the wall, and in sufficient numbers to hold the stem in position after the manner of Ivy.—H. P.

Chrysanthemums in pots v. planted out.—The beauty of *Chrysanthemums* is so frequently tarnished by early frosts or drenching rains, that, as a rule, it is advisable to shelter them under glass. After growing *Chrysanthemums* in all sorts of ways, I am convinced that, as regards quantity of bloom, the planting-out system has a decided advantage over pot culture, for the *Chrysanthemum* is such a gross feeder and strong rooter that, unless watering is carefully attended to, the plants lose their lower leaves, and their beauty as decorative plants is thus greatly impaired. Planting out economises labour. Having a quantity of *Chrysanthemums* to grow for supplying cut flowers and for general decorative purposes, the cuttings were propagated as they could be obtained during the months of February and March, and as soon as large enough they were potted off in 3-inch pots and set in a warm vinery until well rooted. They were then hardened off in a cold frame, and planted out in April in rows 2 feet apart each way. Some were also potted in 7-inch pots and kept well watered, but the planted out ones are by far the best plants, though they have not had a tithe of the labour bestowed on

them; therefore I shall adopt the planting-out plan for the future, and I recommend others who have not too much spare labour to do the same.—J. GROOM, *Gosport*.

WINTER FLOWERING PLANTS.

THIS will be a busy time with plant growers, more especially with those who have to make large provision for winter, as nearly everything flowering at that date will require overhauling, and much repotting will have to be done. The first plants needing attention are Chrysanthemums, which should have their final shift at once, as, unless the pots become well filled with roots, and the plants thoroughly established and matured, they cannot bloom satisfactorily. The soil best adapted for Chrysanthemums is a good fibry loam in which about a sixth portion of mild, thoroughly decomposed manure is mixed; and if potted firmly in this compost they will flourish and produce good flowers. The shoots ought not to be stopped after this, but staked and tied carefully out, as at the stage at which they now are they are apt to be broken by wind or wet. The best manure water to give is that made from cow or sheep manure and soot, but before using it it ought to be perfectly clear.

BOUVARDIAS are most useful winter-flowering plants, but their ability to flower depends much on the way in which they are grown. If in small pots now, as young spring-struck plants may be, they should at once be potted in a mixture of about half peat and loam, or in the latter with the same quantity of leaf mould. They should then be plunged in a pit or frame, where they can be kept rather close for a time till they get a good start. As soon as it can be seen that they are moving freely more air will be required, and the plants when sufficiently advanced will be all the better for having the lights withdrawn during the day; the exposure from so doing will be of great benefit to them, as it will harden up and ripen the young shoots, and assist in making them set fine heads of bloom. Some plant out their Bouvardias instead of potting them, and it is a very good plan, as under that system of culture they give very little trouble during summer, and are secure from over-watering, on account of the greater body of soil around them. If planted out, a pit or frame should be prepared by being partly filled with some mild fermenting material, and on this, after being trodden firmly, 8 inches or so of leaf-mould and loam or refuse peat should be placed, in which the plants may be planted. During summer, all that is necessary is to water occasionally, which is best done overhead through a rosed pot. They should also be kept syringed or sprinkled daily whenever the weather is at all hot and dry. This damping of the foliage will be the means of warding off red spider, to which Bouvardias are rather subject, as also to green fly, which may be quickly got rid of by fumigating with Tobacco, and afterwards giving a heavy syringing with clean water to wash off any stragglers and deposit left by the smoke.

Plants of Bouvardia that are planted out need taking up and repotting in time to allow their roots to get fresh hold of the soil before winter sets in.

SALVIAS are indispensable for autumn, winter, and spring, seasons at which one or other of the many varieties may be had in flower. The best for autumn is *S. splendens Bruanti*, which is a great improvement in every way on the original form; it has better foliage and much larger and brighter spikes of flowers, which make a brilliant display. *S. rutilans*, the Pine-apple-scented Salvia, is the next to succeed it, and, though small in blossoms, they are produced freely, and are of a bright telling colour. *S. Pitcheri* is quite a gem in its way; its blooms are of a lovely blue, and good strong plants of it flower the whole of the winter. *S. Heeri* comes in early in spring, and is one of the freest and most useful; besides being very floriferous, it lasts long in perfection. *S. gesneræiflora* is the latest of all, and a most desir-

but to get them really fine they must have liberal treatment, which can be best afforded by planting them out. Before doing this, trenches should be prepared after the manner of those for Celery, except that they need not be so deep, and the plants divided and turned out in them, after which they should be kept well supplied with water during summer, when they will make strong crowns that will send up blooms freely and make a grand show. When potted up in autumn, the most suitable place for them is the foot of a shady wall, where, if sprinkled overhead, they soon get fresh root hold, and become ready for slight forcing or placing in the greenhouse.

LIBONIA FLORIBUNDA is another plant that is of great service for winter decoration; but, to have stock of it of a useful size, cuttings ought to be struck early, and should now be fit for putting in the pots in which they are intended to flower. As old plants flower best, it is always advisable to keep over a portion; thin them out and cut back their heads, which soon break again and become refurnished with shoots. These only flower really well after full exposure, which the plants get if plunged in some place exposed to the sun or are kept well up to the glass in cold frames, where they can have plenty of air. Like most soft-wooded greenhouse subjects, this Libonia does well planted out and lifted again, but it requires great care at and after the taking up, as it is apt to lose its leaves, which fall if the plants become dry or suffer from any check on removal.

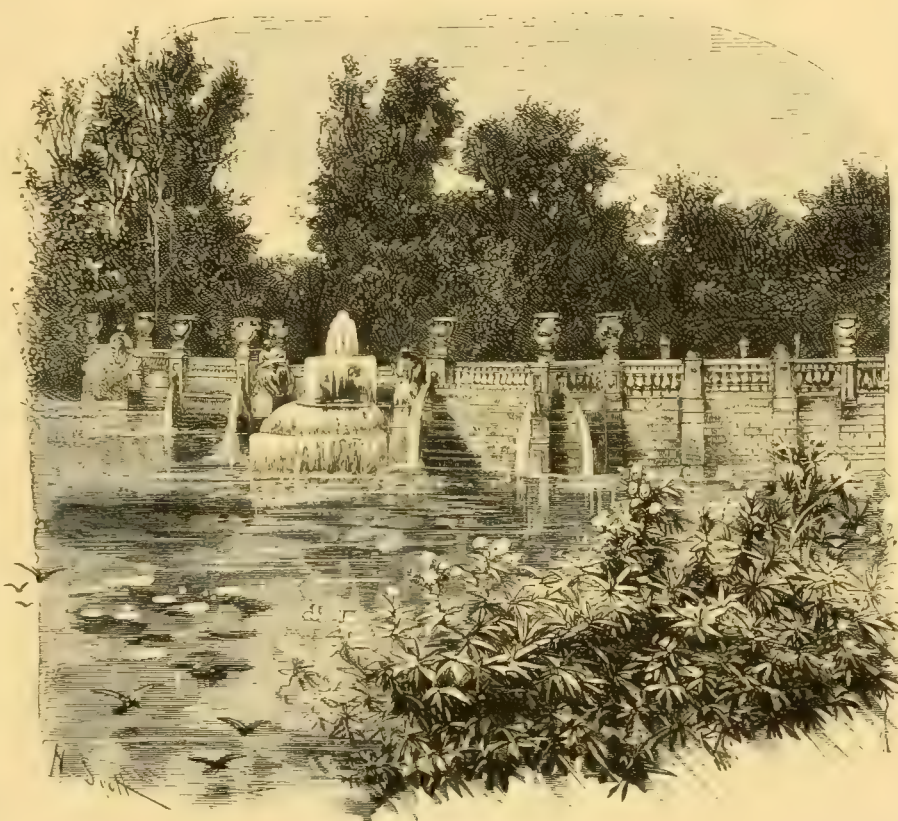
SCHIZOSTYLIS COCCINEA is a plant not half so much grown as its merits deserve, as during nearly the whole of the winter it flowers with great freedom, sending up its spikes of Gladiolus-like blooms in long-continued succession. To have them good the crowns must be strong, and they may be had so by pulling the plants asunder, after shaking them out; then repot and give them light rich soil. When this is done they should be kept close in a frame for a time and syringed till they get a good start; then they should be plunged into the open.

PELARGONIUMS of the zonal kind are also of great value for winter flowering, but they only bloom freely when properly prepared for that purpose. This can only be done by potting in rather poor sandy soil, and keeping the young plants rather pinched at the roots and well exposed to the sun; it is not growth that is wanted so much as hardness and ripeness of the shoots. If these are firm and short-jointed, and the plants late in the year are kept on light airy shelves or well up to the glass in a warm dry house, they cannot fail to produce plenty of bloom.

S. D.

A TERRACE WALL.

THIS is a scene in a Continental public garden, which as drawn is pretty, because of the foreground and of the background which the artist takes care to put in. Unhappily, our terrace gardens have generally no such tender relief; all is hard and angular about them, as a rule. Among the most striking examples of the dreadful terrace



Terrace wall with background of foliage.

able kind it is, as, besides having fine foliage, it is good in habit, and the spikes of bloom are large and striking. Unlike the others, the two last named sorts dislike the least artificial heat, and are often spoiled thereby, but the three others just mentioned require a little warmth to bring them out in perfection. During the summer they all do best out of doors, either planted out or in pots, the former being the way in which large plants may be had most readily, as, with a free root run they grow much faster, and keep more healthy and better furnished below. If grown in pots the best plan is to make long narrow beds of three rows or so, and plunge them in half rotten straw or litter, the same as Chrysanthemums, as then they are handy to get at and look to as regards watering. The soil most suitable for Salvias is fresh fibry loam, with just a little well-rotted manure mixed with it, together with a sprinkling of sand to keep the whole open.

CALLAS, or, as they are called now, Richardias, or Arum Lilies, are grand winter blooming plants;

garden we have seen of late is the garden of the "Star and Garter," at Richmond, in which a great deal of rubbish "architecture" and New Road statuary has been indulged in. Sometimes one sees a private place in no better taste, but here we must not speak. Our houses require the architect's full attention; there is plenty of work for him without spoiling our gardens with absolutely useless and costly work!

TREES AND SHRUBS.

SHRUBS IN PLEASURE GROUNDS.

BETWEEN underwood and shrubberies proper a clear distinction should be drawn. Wherever groups of tall trees are planted or exist in grounds, although it may be advisable to fill the space up under them with bushes of dwarfer growth, such plantings can never become healthy shrubberies, whether they be evergreens or deciduous bushes, because none of the ornamental shrubs used in gardens will succeed satisfactorily under the shade of trees. They will grow for a time, and Hollies, Yews, and Rhododendrons will do better than most other subjects; but when the shrubs are intended to flower and make handsome specimens, they must have full exposure. The common Portugal Laurel makes a handsome, compact, glossy-foliaged bush in the open, and in the south of England even young bushes flower with remarkable freedom; while under the shade of trees it becomes a straggling and poor shrub, frequently requiring to be cut down to keep it green and dense, and it never flowers. It is the same with all shrubs, but in planting grounds the fact is often lost sight of, and shrubs are planted merely to fill up between deciduous trees which present a bare aspect in winter. The proper places for Evergreens and dwarf deciduous shrubs are the open spaces on the margins of groups of tall trees and on the backgrounds of lawns, but always where they are not shaded. Under such circumstances the growth is healthy, and Evergreens look bright and clean in winter when they are seen most, and all flowering species flower in due season, because their growth is properly matured.

IN ORDINARY SOIL most kinds of shrubs will grow if they have head room. In the course of a few years rich mould from the annually shed leaves soon accumulates on the surface, and is as good or better than any manure that can be applied. In cutting some very old Rhododendron bushes not long since, a rich leaf-mould 6 inches deep was found under the branches, which had rooted into it as natural layers, and the roots extended in all directions on the surface, satisfactorily accounting for the luxuriance of many of our Rhododendrons here, which were originally planted in the natural soil—a poor, thin loam. Indeed, the practice of clearing the leaves out from beneath shrubs cannot be too severely condemned, because they are the natural and only provision for the roots, alike protecting them from cold and providing them in time with the very kind of food which they require. All Evergreens shed their leaves annually like other trees, and as their foliage is very abundant, it soon forms a deep layer on the ground. But, as has been hinted, the greatest disappointment results from planting them under trees. In winter the nakedness of deciduous plantations is an eyesore, inducing proprietors to plant, and they act on the impulse of the moment without due reflection. By far the best way to produce cover in deciduous woods is to mix the deciduous with tall-growing Evergreens, like Hollies, Yews, Deodars, and Spruces, planting these not under the other trees, but in spots amongst them where they will have light above all the year through. In this way the two, deciduous and evergreen, grow up together without injuring one another, and the result in the end is far more satisfactory than attempting to grow one kind of tree under the other; as a rule, however, notwithstanding how well things may have been done at first, a few years give the most rampant growers the advantage, and before the opportunity occurs

of making the necessary thinning, many things are smothered and others get drawn up weakly.

IN NUMBERS OF PLEASURE GROUNDS conditions have altered since the grounds were first laid out and planted. Trees have grown up and become crowded, and shrubs of a strong growing character have usurped far more than the space allotted originally to them. By this time, however, objections to removing the larger trees are raised, the thinning out is not well done, and little improvement is effected. It cannot be too clearly impressed upon proprietors not practically acquainted with such matters that the only difficulty they have to surmount in such cases is to make up their minds where they will have good lofty and luxuriant Evergreens and flowering shrubs, and where they will have tall trees, for they cannot have both on the same spot. The furnished appearance of pleasure grounds in winter depends almost entirely upon the arrangement of the Evergreen plantations, and one requires to see a garden well stocked with these to understand what a blank they fill in the landscape, however limited the view may be. A garden has always two aspects. It looks best in summer, when both deciduous and evergreen trees are in their prime; but if too many deciduous subjects are used to the exclusion of Evergreens, a naked appearance will be presented in winter. One can see far through the leafless branches of deciduous trees, unless the backgrounds are well packed with Evergreens, which should be disposed so as to block the view in all objectionable directions after the leaves fall off deciduous trees in autumn. J. S. W.

Propagating *Exochorda grandiflora*. M. Malet, nurseryman at Plessis Piquet, finds that the best way of propagating this fine flowering shrub is to take the cuttings in August, put them separately into small pots, and place them in a cold frame in a north aspect until rooted. The majority of flowering shrubs may be propagated at this time of year. Take the partly matured wood, keep the soil moist and expose them to the night air. The foot of a north wall is the best position for them.—J. C. B.

***Weigela candida*.**—This is, I should say, destined to be a very popular *Weigela*. It is good in habit and vigorous in growth, and the flowers are pure white. *Hortensis nivea* is an older white-flowered kind, from which *candida* differs in having a more erect and compact habit, in being earlier flowering, and easier to propagate. Cuttings of *candida* strike root as easily as those of any of the *Weigelas*, which is not the case with *hortensis nivea*. The latter is a native of Japan, but *candida* is, I believe, a seedling of Continental origin. Like the rose-coloured kind, this *Weigela* stands in the front rank amongst spring flowering shrubs. Our *Weigelas* this season promised to produce an unusual amount of bloom, but the sharp frosts experienced about six weeks ago greatly injured the flower buds.—ALPHA.

***Corylopsis spicata*.**—This is a near ally of the Witch Hazels, and, like the Japanese representatives of that class, it flowers very early in the season, before the leaves unfold. It forms a bush 3 feet or 4 feet in height, with long, stalked, heart-shaped leaves of a light green colour, and bears flowers in drooping racemes 2 inches or 3 inches long. Owing to each raceme being composed of several blossoms of a pale yellow colour, with conspicuous red anthers and yellowish green bracts, a well-grown bush of this *Corylopsis* when studded with blossoms in early spring is very conspicuous. It was introduced about twenty years ago, but seems to be but little known, though, as far as my experience goes, it is quite hardy.—T.

Paris market pot plants.—The good taste combined with good culture of the French market growers is well known. Some clever examples that our growers would do well to profit by may now be seen in the Paris markets in the shape of pots of mixed foliage plants. Begonias of the Rex section, *Dracænas*, seedling Palms, Ferns,

Cyperus, *Tradescantias*, and other plants of ornamental character are grouped together variously, perhaps one plant of three or four kinds together, with an extremely pleasing and ornamental effect. Another happy idea is to put together a *Canna* and one or two *Gladiolus brenchleyensis*.—G. J.

GARDEN FLORA.

PLATE 452.

ODONTOGLOSSUM PESCATOREI VEITCHIANUM.*

PERHAPS the keenest pleasure an enthusiastic Orchid cultivator experiences is that of watching from day to day the gradual unfolding of some promising flower-bud on a newly-imported plant. This bud may perchance reveal a variety of extraordinary beauty, and may probably prove to be unique. Among the more remarkable varieties lately brought into notice is that which forms the subject of this week's plate. This is indeed an *Odontoglossum* of surpassing beauty. Of the thousands upon thousands of plants of *Pescatorei* that have been imported and flowered in this country it is astonishing to find none to even approach this unique *Veitchian* variety. For the information of those who may not happen to know the typical or original *O. Pescatorei*, it might be well to say that its flowers are, as a rule, spotless, except the labellum, which sometimes has a few spots and blotches upon it. There is no accounting for how or where this *Veitchian* variety obtained its rich colouring. It certainly is not a hybrid, as it is in every way the counterpart of the type, except in colour; it must therefore be assumed that it is a native seedling plant that has sported, so to speak, from its congeners, and had it reproduced itself in the New Granadan forests, it would probably have formed the starting point of what would now be termed a distinct species.

This *Veitchian* variety first opened its flowers in the Royal Exotic Nursery, Chelsea, during the last week in March, 1882, greatly to the surprise of everyone, although something uncommon was expected, inasmuch as in the bud state the crimson-purple colour of the sepals could be seen distinctly. The following week it was exhibited at the Royal Horticultural Society's meeting, at which it was unanimously awarded a first-class certificate. The plant at that time bore a small erect spike, carrying about half-a-dozen flowers. A few days afterwards it was transferred to Baron Schroeder's collection at The Dell, Egham. Since the plant has been at The Dell it has grown to quite a fine specimen under the good treatment accorded it by the Baron's gardener (Mr. Ballantine). It has now several bulbs, and each succeeding April it develops a flower-spike larger and larger. This year the inflorescence was quite a broad panicle carrying some dozens of blooms, and, as may be imagined, was the embodiment of elegance and beauty. When exhibited at South Kensington, the committee accorded Mr. Ballantine a "commendation" for his cultural skill. The plate was drawn from the plant this year, and though the colour is represented a little duller than it is in reality, it is a good portrait of the flower-spike.

Some orchidists would probably like to see several such varieties as this crop up from importations, but if such were the case, half the interest that centres round Baron Schroeder's plant would be lost, for among plants, as in other things, is there not as much charm in rarity as in beauty?

* Drawn in Baron Schroeder's garden, The Dell, Egham, April 9, 1884.



The nearest approach to the Veitchian variety that has been seen about London is singularly enough named *Schroederæ*. This, too, emanated from Messrs. Veitch's nursery; it is a pretty variety, indeed, but the colour is not so rich or so pronounced as in *Veitchianum*. It is not a little singular that the two most popular species of *Odontoglossum*, namely, *O. crispum* (*Alexandræ*) and *O. Pescatorei*, so similar in many respects, should differ so widely as regards their capabilities of producing varieties. One may see a whole household of plants of *Pescatorei*'s species in flower and not find a single variation in shape or colour, while on the other hand it is often difficult to find two varieties exactly alike among a similar number of *O. crispum*. Varieties of the latter species are endless, but numerous as they are, there is one that far outdistances the others. This is the Veitchian variety which surprised every orchidist in London last May. It is quite as remarkable a variety of *O. crispum* as the Veitchian variety of *Pescatorei* is among varieties of that species. It, too, derives its distinctiveness from the heavy blotches of colour on the sepals disposed in a bar-like manner, but in addition to this the flower is unusually large and finely formed. Baron Schroeder is likewise the fortunate possessor of this rarity.

W. G.

FRUIT CROPS.

METROPOLITAN AND SOUTH-EASTERN DIVISION.

Claremont.—The disastrous frost of April 23 smote with strict impartiality bud, expanded flower, tiny fruit just set, and fruit of the size of marbles. If this is annually to be expected we must have spring protection for all kinds of fruit, for, whatever some may say, I emphatically decline to believe in the ability of anyone to bring his trees to such a pitch of cultural excellence that they resist with impunity 12° and 14° of frost. The season has also been remarkable for unprecedented numbers of aphides, and constant application has been necessary to keep wall trees fairly clean; even Pears are with us this season badly attacked. To enumerate our losses I may say the crop of Peaches and Nectarines is very thin, the frost cutting the young fruit behind a triple thickness of fine tanned netting; Nectarines are the better crop of the two. All other stone fruits are a total failure, with the exception of Morello Cherries, which are a moderate crop. The set of Apricots was this year very good, and the fruit well advanced when the frost came. Of Pears we have none, at any rate not more than a dozen on a wall 100 yards long. As in the case of Apricots, the early varieties of this fruit, such as *Citron des Carmes*, *Jargonelle*, and *Bon Chrétien*, set remarkably well, many of them being as large as small Hazel Nuts on April 22, when they were frozen almost to a pulp. Apples are also very thin; there is a partial crop on some of the late varieties, but of early dessert and kitchen fruit we have none. Of the smaller fruits, Strawberries have been a very heavy crop, our main plantation, in a border with a moist clay bottom, being but little affected by the dry weather. *La Grosse Sucrée*, *Sir J. Paxton*, and *Dr. Hogg* are our best varieties. Raspberries are a fair crop, but the fruit is small. Gooseberries, like early Pears and Apricots, were frozen through except where well protected by the foliage, and we have not half a crop. Some of the large dessert varieties trained to wires in a well sheltered spot are much better; Currants of all kinds are a very good crop, and the superfluous growth being removed from the Red and White sorts rather early in the season, we have not been bothered quite so much as in other cases with the attacks of aphides. I may add, in conclusion, that wall trees are now looking well, the advent of cooler weather, with an occasional shower, being of immense benefit in keeping fly in check.—E. BURRELL.

Coombe Lane, Kingston.—Of Apples, Pears, Cherries, and Plums we have scarcely any. Peaches are a fair crop, and so are Apricots. Black Currants wholly destroyed; Red Currants good, but blighted; Gooseberries good. Strawberries only half a crop; Nuts a sprinkling. We had such very severe frosts in April, that nearly everything was killed. Plums had already set, and also early Cherries. The frost was so intense, that all flowers were killed, even those showing colour. I have never known fruit so entirely destroyed by frost. Late sorts of Apples, such as *Court pendu Plat*, which does not flower until May, were killed just the same as the others. We are on the London clay, which about here comes right up to the surface.

POTATOES are a good crop.—WM. DENNING.

Lythe Hill, Haslemere.—The fruit crops in this district, with two exceptions—Pears and Plums—are good. Plums are a complete failure, not a tree anywhere bearing a crop. Pears are a light crop, but what are left promise to be good. The heaviest crops are on espaliers. The varieties that are best fruiters are *Easter Beurré*, *Ne plus Meuris*, *Jersey Gratioli*, *Prince Albert*, *Bergamot d'Esperen*, *Prince of Wales* (Hughes), *Winter Nelis*, *Beurré Superfin*, *Beurré de Capiaumont*, and some culinary varieties. The Apple crop promises to be the best we have had for years. Although last year's was an exceptionally good one, this season's promised to be better both in quantity and quality. There are scarcely any trees not bearing. The varieties that do best round this neighbourhood are the various Codlins, *Lord Suffield*, *Stirling Castle*, *Duchesse d'Oldenburg*, *Blenheim Orange*, *Cockle Pippin*, *Dumelow's Seedling*, *Emperor Alexander*, *Stone's Seedling*, *Lord Burghley*, *Court of Wick*, *Yorkshire Greening*, *Hawthornden*, *Boston Russet*, *Osline*, and *Cox's Orange Pippin*. Gooseberries, Raspberries, Black and Red Currants are all abundant, and fine Strawberries have been plentiful and very fine, some of the fruit turning the scale of 2½ ounces, but their season has been rather short, owing to the intense heat which prevailed at that time. Cherries and Nuts are over the average. Peaches and Nectarines are plentiful, and the trees are looking well. Figs are good on walls, but they do not ripen here on bushes in the open with us.

THE POTATO CROPS have suffered very much from the long drought and high temperature; early kidneys have, however, turned out plentifully and good. Late Potatoes, I fear, will be small, if not badly diseased, as I see the haulm much spotted, and in some places gone off. The varieties that do best here are a selected variety of *Myatt's*—more smooth and earlier than the type. I have grown it six years alongside of the last named and find it superior. It is also a good forcer. *Veitch's Royal* and *Myatt's Ashleaf*, *Wormleighton Seedling*, *Beauty of Kent*, *Rector of Woodstock*, *Porter's Excelsior*, *Schoolmaster*, and *Vicar of Laleham* are all good.—ALFRED EVANS.

Rydens, Walton-on-Thames.—The fruit crop in this neighbourhood is anything but satisfactory. Apples in most gardens are a failure. There is a sprinkling on trees of the following sorts, viz., *Wellington*, *Cox's Orange Pippin*, *Blenheim Orange*, and *Fearn's Pippin*; the last named is bearing the heaviest crop that I have seen. American blight has been a great nuisance this season. Pears are a total failure both on walls and in the open, and the same may almost be said of Plums, with the exception of a few Victorias on walls. Apricots are also a total failure, owing to the severe frost which we had in April. Peaches, with a very few exceptions, met the same fate. We had no protection whatever, and others who have used it are no better off this season; in fact I know several instances in which trees in unheated Peach houses suffered very much from frost. Gooseberries have been a very fair crop, and free from caterpillar. Black Currants are rather thin; Red and White very plentiful, but not very clean, owing to the trees being so covered with blight during the early part of the season. Of Strawberries we have had an

abundance, but the crop was of rather short duration. Raspberries are also a good crop, and so are Mulberries. Filberts and Walnuts will be scarce in this neighbourhood. Our soil is light and sandy on a gravelly subsoil.—GEO. CARPENTER.

High Grove, Pinner.—Fruit crops in this neighbourhood are fairly good. Apples about the average where slightly sheltered, but in many orchards choice varieties are scarce; Codlins are good, and we have a fair sprinkling of *Wellingtons* and *Blenheim Orange*. Pears very scarce; our subsoil being cold, they do not come to maturity here as they do on a lighter and warmer subsoil. Of Plums we have very few, even on walls; the best varieties are *Victoria* and *Prince of Wales*. Of *Golden Drops* and *Damsons* we have none; of Cherries we have a fair crop of *Morellos*; Raspberries are good; Red Currants fairly good; Black Currants good, but much damaged by blight; Gooseberries are an excellent crop here, but in many places a failure, our bushes being well sheltered from east winds; Strawberries are an excellent crop, and the fruit fine and well flavoured owing to the dry season; Peaches are an average crop; Nectarines average; and Apricots a failure in many places.

POTATOES are looking well and mostly free from disease; early kidneys have been small, but good.—G. BRUSH.

Cobham Hall, Gravesend.—Apricots here are under the average, except where coping boards have been used; Plums are a bad crop; Cherries under the average; Apples and Pears a poor crop; Raspberries fairly good; Red and Black Currants under the average; Strawberries an average crop, but soon over; Nuts under the average; Peaches and Nectarines average. The soil hereabout consists of gravel and chalk.

EARLY POTATOES are a light crop owing to their having been cut down by spring frosts. Late varieties are looking well since the late rains, and I have not as yet heard of any diseased tubers.—F. DEUXBERRY.

Heckfield.—Up to the middle of April there were abundant signs that we were likely to have the heaviest fruit crop of recent years, but from the 20th of that month to the second week in May all our hopes were shattered by the thermometer repeatedly indicating 22°, and on two occasions 18° or 14° of frost, so that the wonder is not that there is so little fruit, but that there is any at all. Apples of most kinds are a moderately good crop, *Blenheim*, *Keswick Codlin*, *Alfriston*, *Cellini*, and *Lord Suffield* being amongst the most fruitful. Pears of all sorts are a complete failure; there is however, a sprinkling on wall-trained trees, more particularly on those having a western aspect, the cause of their escape being due to shelter from the blighting effects of the north-east winds that were very prevalent during the blossoming period. Peaches and Nectarines are full crops; they were well protected by canvas coverings, which were not only let down nightly, but kept down the whole period during which the easterly winds lasted. Apricots are a good half crop, and promise to be extra fine; they also were thickly covered with scrim canvas. Plums are more disappointing than any other fruit, the promise was so fine, there being scarcely a branch not covered with blossom, and yet nearly all was destroyed. There is a half a crop on *Autumn Compôte*, *Pond's Seedling*, *Kike's Victoria*, and *Golden Drop*; these are on walls; on standards and bushes in the open border there are none. Sweet early Cherries were a failure, but *Morellos* are excellent both on north and east walls and standards in the open. Strawberries were never a heavier crop or the quality better, a remark which also applies to Raspberries. Currants have been thin crops and the bushes much overrun with fly. Gooseberries were sadly injured by the May frosts, but in most places the crop has been fairly good. Walnuts are immense crops, and so far as I have yet observed wood Nuts and the cultivated varieties are good crops.

POTATOES are likely to make amends for our fruit failures, for as yet there is no sign of the

murrain, and the tubers turn out clean, and the yield is heavy.—W. WILDSMITH.

Farnborough Grange.—Peaches thin, a few in some places; Apricots under average; Cherries (Morellos) average, other sorts almost a failure; Plums a failure, just a fruit or two on a tree here and there; Pears almost a total failure; Apples an average crop in most places; Strawberries very good; Raspberries an average crop; Currants very good; Figs thin; Gooseberries and Nuts good average crops. Another bad spring for tender fruits has shown us the desirability of reducing long spurs, and thereby keeping our fruit trees close to the walls; also the ill effects of wiring walls, a system strongly recommended a few years ago. Both last season and this we should have had no Apricots or Peaches had the trees not been close to the wall. Although the trees were protected by thick blinds drawn close every night, the frost was so severe that it turned the fruit farthest from the wall black. It did not, however, injure the growth of the trees in any degree. Apricot trees look well and are not cankered. Peaches suffered from black fly, as did also Plums, some bush trees of the latter being almost killed. They are now, however, making good growth. Our wall Plums were protected by double fish nets, and some trees with Fir branches; many bush Plums, too, were protected by long Fir branches, but with the result that a few trees not protected side by side, have a few fruit on them, while those protected have none. Many Pears on walls were protected by double fish nets, and some have just a few fruit on them. In a garden close to me with good high walls, good coping, and protected, Plums, Cherries (sweet), and Pears fared a little better. Morello Cherries are a good crop, and the trees clean; sweet ones poor. Apples on some trees are a heavy crop where sheltered and the sorts hardy kinds. The following are bearing the best crops, viz.: Keswick, Manks, and Dutch Codlins, Warner's King, Hawthornden, Cellini, Lord Suffield, King and Cockle Pippins, Cox's Orange and Fearn's Pippins, Beauty of Kent, Braddick's Nonpareil, Sturmer's Pippin, Norfolk Beaufin, Royal Russet, Wellington, Hambledon Deux Ans, and Dutch Mignonne; these are all well cropped. Some early sorts have not a fruit on them, although well bloomed. Strawberries are a good crop. Oscar, President, Vicomtesse Héricart de Thury, Keen's Seedling, Eleanor, and Elton Pine are the kinds that do best here; of the latter we have still a good supply on a north border. Raspberries do not prove so satisfactory as we could wish on our light, hot, sandy soil; Fastolf does best. Currants are good, although much blighted; La Versailles is a very good kind. Gooseberries are not so good as last year; upright growers are very thin. The best croppers are Warrington, Green London, Whitesmith, Crown Bob, and Ironmonger. Nuts are good, especially Prolific Cob; hedge Nuts abundant. The soil here is light and sandy, resting on gravel, and gets very dry in such a season as this.

POTATOES look well, although disease made its appearance on July 31; early ones are small, but very good. The dry state of the soil is all in favour of the crop.—JOHN CROOK.

Leigh Park, Havant.—The fruit crop in this neighbourhood is very partial; in some gardens there is, however, a fair crop. Bush fruits are small, and the difficulty of keeping them from the attacks of birds during the late great drought has taxed our energy to the utmost. We have a good crop of Apples again on our recently root-pruned trees, viz., on such sorts as Lord Suffield, Blenheim Orange, Keswick Codlin, King of the Pippins, Kerry Pippin, Winter Hawthornden, Ribston Pippin, Cox's Orange Pippin, Nonpareil, and Court pendu Plat. The success attending the root-pruning of the above sorts of Apples has been marvellous. Peaches are a good crop on walls where only coping board about 15 inches wide is used for protection. Strawberries have been abundant in this neighbourhood, but their season has been short owing to the dryness of the ground

and great heat; Pears in many gardens will be scarce; Gooseberries are a good even crop where over-pruning has not been resorted to, but fruit on hard-pruned trees is thin.—C. PENFORD.

Bearwood, Wokingham.—There never was a better show of all kinds of fruit than we had here and all about this neighbourhood this year; all sorts were loaded with blossoms, but the frost in April, being so severe and continuing so long, destroyed nearly all the crops. Of Pears scarcely one is to be seen; Apples, too, are thin in places; Plums on standards are very poor, and on walls under the average; Peaches and Nectarines are not so good as last year, and the same may be said of Apricots; Filberts and Walnuts are very good; also bush fruits of all kinds; Strawberries have been plentiful and good in quality.

POTATOES are looking remarkably well this season, all our early kinds turning out fine and good. All late sorts promise well, and at the present time very free from disease, and every prospect of being a heavy crop.—JAMES TEGG.

Dropmore, Maldenhead.—I have visited three gardens to-day, which I shall call 1, 2, and 3. 1 consists of good loam, but in a low situation, surrounded with hedgerow timber; 2 is an old garden facing the south-east, and exposed to the winds, owing to its lying rather high; 3, a new garden, faces due south and is on gravel, but the land is pretty good and of moderate depth. Most of the land about here is both shallow and sterile; it is very good where there is loam, but the latter is seldom met with. 1, Apples moderate; Pears none; Plums and Peaches very few; Apricots slight crop; Gooseberries, Currants, and Raspberries good; Strawberries very good; Nuts good; Nectarines none; Cherries few. 2, Apples scarce; Pears and Plums none; Peaches, Nectarines, and Apricots very good; Gooseberries, Currants, and Raspberries good; Strawberries very good; Nuts good; Cherries none. 3, Apples and Pears scarce; Plums good; Apricots scarce; Nectarines none; Cherries, Nuts, and Walnuts good; Strawberries very good; Currants, both Red and Black, good; Gooseberries very good.

THE POTATO crop up to the present time is most promising, very prolific, and free from disease, and as the tubers are full sized, I hope there will not be any serious loss.—PHILIP FROST.

Royal Gardens, Windsor.—Standard, espalier, and pyramid trees are, generally speaking, carrying poor crops, owing to the severe north-east and east winds that prevailed while the trees were in bloom during the latter part of April and early in May, accompanied by frosts of 12° and 14°. Apricots are a good average crop; Plums a bad crop; Cherries about half a crop, and have been sadly infested with aphids; Peaches and Nectarines are a very good crop, and the trees are making good growth; Apples are under the average; Pears a bad crop, almost a failure, but both these and Apples look promising for next season. Small fruits have been abundant, though much blighted. Strawberries have been plentiful, large, and of fine flavour. Nuts are a poor crop.—THOMAS JONES.

Highclere Castle, Newbury.—Apples are a fair crop here, quite up to the average, and though the trees were much infested at one time with green caterpillar, they are now clean and healthy. I attribute this in a great measure to small birds, which are unusually numerous this season. Pears are almost a total failure on walls, owing to the severe frosts and cutting winds that prevailed whilst they were in bloom; a few standards exposed to the north and west, but somewhat sheltered from the east, winds are carrying a fair crop, and the trees now look clean and healthy. Plums are poor, the best being Early Prolific on a south wall, which appeared to feel the effects of the frost less than any other variety here, the next best being Magnum Bonum. Apricots, where protected, set well, and the trees have made plenty of good wood. They appear to enjoy the hot, dry weather. Small fruits generally have done well, and may be reckoned a fair average

crop. Whilst I agree with Mr. Baines that well ripened wood is the first essential to a good crop of fruit, I am also sure that protection from frost is quite as necessary in seasons like the last. The material which I use and which I like better than anything else for the purpose is cotton netting, Nos. 2 or 3, as sold in London as horticultural shading. It is simply tacked to poles slanting from the top of the wall and resting on the ground about 4 feet from its base; it need not come nearer than 2 feet or 3 feet of the bottom of the poles, and can remain up till all danger from frost is over. By means of its use I have not failed to secure a good crop of Peaches out-of-doors for the last six years, although several times during that period there has been driving snowstorms and cold rains followed by sharp frosts at night whilst the trees were in bloom. The situation, too, was very low and damp, and much exposed to spring frosts.—W. P.

Easthampstead Park, Wokingham.—Until March 22 we had every prospect of a good crop of fruit. On that date we had 12° of frost. Apricots about the size of marbles were frozen through, also Plums. Pears, which were in full blossom, had the leaves frozen together; Gooseberries fell off the bushes, and the subsequent very dry weather burned up the early Strawberries, which were only half a crop; of Black Currants we have only a few, but extra fine; Red Currants plentiful; Raspberries moderate; Morello Cherries were protected with double nets, which secured a moderate crop of fine fruit. This situation is rather subject to spring frost. At higher elevations there is a good sprinkling of Apples. Here there is not a bushel on all the trees.—N. SINCLAIR.

Goodwood.—Fruit crops in this locality generally are pretty good, with the exception of Plums and dessert Cherries, which are much cut up with blight. Peaches, Apricots, Pears, Figs, Strawberries, Raspberries, and all kinds of bush fruits are good average crops, and excellent in quality; Morello Cherries very plentiful and good. The subsoil generally in this locality is principally chalk and gravel, and gardens, as a rule, are pretty well sheltered.

POTATO crops are most promising, and at present free from disease.—F. RUTLAND.

Leonardslee, Horsham.—The Apple crop here is above the average, a remark which applies to this district generally, every old tree being well furnished with fruit. The following kinds are bearing best, viz., Keswick Codlin, Lady Henniker, Adam's Pearmain, Wellington, Melon Apple, Sturmer Pippin, Cox's Orange Pippin, Lord Suffield, Carlisle Codlin, Dutch Mignonne, and Yorkshire Greening. Pears are very bad; out of eighty-five kinds I have only three with a crop of fruit on them, viz., Chaumontel, Nouveau Poiteau, and Beurré Clairgeau. These are pyramid trees. Pears are very scarce throughout this district. Of Plums on walls we have a few, but bush and standard trees are a total failure in this locality. Peaches and Nectarines scarce outdoor; indoors over the average. Cherries have been a good average crop, and the fruit fine in quality, especially Morello Cherries. All kinds of small fruit have been abundant. Strawberries, Raspberries, Red, White, and Black Currants very good indeed here and throughout this locality. Kentish Cobnuts are a large crop; also Walnuts. Quinces will be a small crop. Figs good on both bushes and walls.

POTATOES.—Early kinds here and in this district are good. Late kinds, too, look well, and up to this date I have not seen any Potato blight.—SIDNEY FORD.

SOUTH MIDLAND DIVISION.

Panshanger, Herts.—In early spring fruit trees of all kinds were loaded with blossom, which looked strong and healthy. Apricots and Peaches were swelling their fruit finely; Plums and Pears were setting freely, when the frost on the 22nd of April and two following days, averaging from 12° to 16°, according to altitude, was

most destructive. We had great difficulty to find a blossom that had not perished, and the wonder is we have any crops at all. Apricots and Peaches which are protected here are a full crop and very good; Plums and Damsons very thin; there are, however, a few Victorias on trees in sheltered positions; of Pears, both on walls and pyramids, we have almost none; Apples partial; some trees may be seen with a fair crop on them, others with none; upon the whole the crop is under the average; Cherries are thin, but good, Morellos very good; Gooseberries and Currants mostly heavy crops; Strawberries were good, but their season was short, owing to the dry, hot weather then prevailing; Walnuts and Filberts appear to be very plentiful everywhere.

POTATOES, both early and late, are looking well, and I have not seen any appearance of disease. The Ashleaf kinds we have lifted are excellent in quality, but rather small.—RICHD. RUFFETT.

Moor Park, Rickmansworth.—Apricots here are abundant and good, both on protected and exposed trees; of Apples we have a full crop on some trees, such as Lemon Pippin, Cox's Orange, Hawthornden, Blenheim, Lord Suffield, and Cellini; others very thin; of Pears we have none except on walls; Cherries are under the average, except Morellos, which are over the average; of bush fruits of all kinds we have good crops; Strawberries have been heavily cropped, but of short duration on light soils, owing to drought; Peaches and Nectarines plentiful; Plums very scarce.

POTATOES look remarkably well, clean, and quite free from disease; early sorts excellent in every way, but rather smaller than usual.—J. C. MUNDELL.

Hatfield House.—Apricots here are under the average, and the same may be said of Plums and Cherries except Morellos, which are over the average. Apples and Pears are under the average. Peaches and Nectarines good crops. Small fruits over the average and fine, and so are Strawberries and Nuts. The cold weather in April sadly reduced crops of Apricots, Damsons, and other Plums, Cherries, Apples, and Pears; Peaches were protected by their own forward young growth; Strawberries suffered with mildew through the dry hot weather which prevailed when they were in fruit. It would be well for raisers of fruit of all kinds to pay every attention possible in order to get late blooming varieties. The Apple Court pendu Plat is very late in coming into bloom and nearly always bears a crop, and the same may be said of the Morello Cherry.—GEORGE NORMAN.

Shardeloes, Amersham.—The fruit crop here and in this neighbourhood is not good this year. Peaches and Nectarines are, however, a fine crop and the trees look well. Of Apricots we have scarcely any, and of Pears very few indeed. Plums are a failure and the trees blighted very much. Of Cherries in orchards along this valley we have none; on higher ground there is a fair crop. Morellos are a very indifferent crop and much infested with fly. Strawberries have been a very fair crop, also Raspberries. Currants and Gooseberries are plentiful; Nuts half a crop. Of Apples we have half a crop.

POTATOES are excellent, and we have no disease at present.—THOS. BAILEY.

Blenheim Gardens, Woodstock.—Of Apricots we have an average crop; and Apples are above the average, especially Blenheims, Wellingtons, Stirling Castle, and Hanwell Sourings. Peaches and Nectarines are good crops; Pears and Plums very partial owing to late spring frosts; Cherries below the average; Strawberries, Currants, and Gooseberries abundant, the former much injured from heavy rains. Cob Nuts very good; Filberts not quite so good; Walnuts a heavy crop.

POTATOES yielding well, but disease spreading rapidly.—HENRY CLARK.

Henham Hall, Wangford.—Bush fruits in this locality have been plentiful, especially Gooseberries, which have been abundant; of Currants and Raspberries we have had plenty; Straw-

berries were a good crop, especially early sorts, the later varieties being cut short by the continuous drought which we had; Apples will average about half a crop; Pears are scarce; Figs on walls are good; Apricots and Peaches abundant; Cherries were a good crop; Plums quite a failure; Walnuts and Filberts are moderate.

POTATOES turn out well, not large, but of excellent quality. We have had but little rain all summer.—G. W. EDEN.

Ramsey Abbey.—With one or two exceptions the fruit crops in this neighbourhood are good, the exceptions in question are Plums and Pears, both of which are very thin, although the Plums are not quite so bad a failure as last year; Apricots, Peaches, and Nectarines are full crops; Apples on dwarf trees average crops; orchard trees thin, attributable in some measure to the very heavy crops last year; at the time when the trees were in blossom, too, the winds were keen and the nights cold. Bush fruits have been abundant; we have never had better crops of Gooseberries and Red, White, and Black Currants; Raspberries and Strawberries also have been excellent. The alpine Strawberries, of which we grow a good many, have been and are still very fruitful; Figs are a fair crop, as are also open-air Grapes. Nuts, including Walnuts, are thin.—E. HOBDAV.

WEST MIDLAND DIVISION.

Morningside Lodge, Kidderminster.

--Like last year, we have scarcely any fruit. The spring frosts disappointed our hopes very much, and when they had passed away the east winds continued till all hopes were gone. Apples are about the only crop, and these are in many instances a large crop. The sorts mostly loaded are the Worcester Pearmain, Lord Suffield, Echlinville Seedling, Cox's Pomona, Blenheim Orange, and, for late kinds, Dumelow's Seedling, Gravenstein, Cox's Orange Pippin, Melon Apple, Claygate Pearmain, Lord Burleigh, Sturmer Pippin, Betty Lee-son, and Bess Pool. The sorts which do not bear so well are Gloria Mundi, Gooseberry Apple, Rymer, London Pippin, Ashmead's Kernel, and Guinness' Pippin; these, though they bear very well for the most part, have not borne so well here. Among Pears there are scarcely any which bear. The kinds which are usually most fruitful are Bon Chrétien, Doyenné du Comice, Easter Beurré, Doyenné d'Alençon; but these and many others scarcely show a specimen, and, indeed, are all but bereft of a fruit. There are no Plums; we have generally had a few Victoria and Rivers' Prolific, but out of thirty to forty sorts there is not even one sort which must be mentioned. Peaches and Nectarines are about as last year; the Lord Napier Nectarine bears well, and so does the Royal George Peach, both out-of-doors and under glass. Raspberries are rather scarce. Strawberries are abundant. Early Crimson Pine, Amy Robsart, Alpha, Enchantress, Gipsy Queen, The Countess, Marshal McMahon, President, British Queen, Bonny Lass, and Carolina Superba being the principal sorts grown, and all these bear abundantly; Enchantress being the best for preserving, and being late is an excellent sort for that purpose. Nuts are fine and in some parts of the garden abundant. Gooseberries and Currants are but middling, and in sheltered parts more abundant; Aston Seedling (rough red) are more abundant and best for preserving. Under glass the crops are uniformly good. Grapes Mrs. Pince's Black Muscat, Bowood Muscat, Champion Muscat, Ryton Muscat, Alexandria Muscat, and Trebbiano are all very fine. Duke of Buccleuch is not so good as usual, and does not crop quite so well. The soil on which my fruit trees are planted is a light one on the gravelly foundation, tolerably deep, and well dug. It requires well manuring and a large supply of water.

OF POTATOES we continue to grow the Hero, which never disappoints; still the Reading Russet is looking very well, and will in some degree help out, the foliage being much less heavy.—WILLIAM RODEN.

Witley Court, Stourport.—Fruit crops in this district generally, with the exception of Pears, may be said to be up to the average. Apples are abundant; Plums on walls a good average crop, but in orchards they are not more than half a crop; Peaches and Nectarines in places are thin, but the trees are making good growth; Apricots in sheltered situations are a good average crop, while in exposed quarters they are scarce; Cherries, Strawberries, Currants, and all small fruits abundant and very fine.—JOHN AUSTIN.

Madresfield Court, Malvern.—In this neighbourhood we have over an average crop of Apples, consisting of nearly all sorts. Plums, on the other hand, are much below the average and poor in quality, the trees being subjected to persistent attacks of aphides; Early Prolific, Victoria, and Pershore are found to be the best croppers, and better than was at one time expected; the latter is a local Plum of great repute around the district whence it takes its name. Damsons and Gages are very scarce, and only to be found in high-lying districts, although they never bloomed better; Pears are quite a failure; Apricots, Peaches, and Nectarines on walls are fairly good both as regards crop and quality; Strawberries numerous and good, but smaller than usual and soon over, owing to continued heat and drought; President and Oxonian were our best sorts; Cherries thin, Morellos excepted; bush fruits good all round.

EARLY POTATOES now sadly diseased. Soil, strong loam, approaching to clay.—WILLIAM CRUMP.

Kingscote Park.—The Peach, Nectarine, Apricot and Plum crop here and in this neighbourhood is quite a failure. Pears and Apples average crops. Morello Cherries very good; Strawberries of all kinds an enormous crop; Raspberries a fine crop; Black, Red and White Currants and Gooseberries abundant; Figs a good average crop, and Walnuts a fair crop.

POTATOES excellent and up to the present I have not seen or heard of any disease.—S. WATHEN.

Tortworth, Falfield.—Peaches, Nectarines, and Apricots are an abundant crop and very promising, and this again without the slightest protection. The Apple crop in this district is very partial; indeed, in some places there is not a fruit, while in others the crop is much above the average, but the fruit is small; the Pear crop is nearly a failure; Cherries are a very partial crop; Plums very thin; bush fruit abundant and good; Raspberries and Strawberries a full crop and good, but soon over; Quinces and Medlars are an average crop; Walnuts abundant; Filberts and Cobs a poor crop hereabouts.

POTATOES promise to be good, but the tubers are small. No disease at present.—THOMAS SHINGLES.

Tidenham House, Tidenham.—Fruit crops in this neighbourhood are above the average. Apples, which are grown very much for cider, are heavily laden, especially in sheltered places; there is also a quantity of table fruit grown. One sort which is much praised is called Shropshire Pippin; in Shropshire it is called Orange Pearmain, a sort which never fails here; it is a very good keeping Apple, but not so good as the Ribston and Ashmead Kernel. Pears are about an average crop; Plums very scarce; Cherries scarce; Apricots, Peaches, and Nectarines full crops; we had to thin them very much; Figs abundant where left untrained; Medlars very good; Currants a heavy crop; Gooseberries a good crop; Raspberries a fair crop; Strawberries abundant. Walnuts and other Nuts good crops.

THE POTATO disease I find has made its appearance hereabouts.—T. PADDOCK.

Blithfield, Stafford.—Fruit crops in this district are looking remarkably well. The dry spring which we had suited this neighbourhood, the soil of which is very stiff and heavy, with marly subsoil. Apples are plentiful and of fair size. Pears, Plums, and Apricots are fair average crops. Bush fruits abundant and fine.

POTATOES, both early and late, are looking well, and I have not seen any signs of disease amongst them.—T. BANNERMAN.

Willey Park, Broseley.—Of Apricots we have an average crop; Plums are a failure; Cherries, Peaches, and Nectarines are average crops; Apples are an average crop; Pears under average; small fruits plentiful; Nuts an average crop. Shropshire is an undulating county, and in the neighbourhood of Willey it is from 600 feet to 700 feet above sea level. The soil is a good strong loam upon a gravelly subsoil, which seems to suit most kinds of fruits, especially Apples and Damsons, which are the principal fruits of the district. Cider Apples, too, are largely grown, and the Prune Damson is grown, as well as the common variety. Amongst Apricots the Moorpark succeeds best, and amongst Plums Coe's Golden Drop, Jefferson, and Rivers' Early Prolific, Victoria, and White Magnum Bonum also succeed well. The best Cherries are May Duke, Bigarreau Napoleon, Empress Eugénie, and Morello. Of Peaches we grow Noblesse, Alexandra Noblesse, and Royal George, and of Nectarines Elruge, Lord Napier, and Pitmaston Orange; these succeed the best on walls, where they receive a slight protection in spring from nets. Our best Apples are the Irish Peach, Devonshire Quarrenden, Cox's Orange Pippin, King of the Pippins, Ribston Pippin, Old Nonpareil, Sturmer Pippin, Hawthornden, Keswick Codlin, Manks Codlin, Cellini, Blenheim Orange, Norfolk Beaufin, Yorkshire Greening. Of Pears we grow Marie Louise, Louise Bonne of Jersey, Jargonelle, Marie Louise d'Uccle, Beurré Diel, Napoleon, Passe Colmar, Knight's Monarch, Beurré Sterckmans, Swan's Egg, Catillac, General Toddlé, and Colmar, all of which seem to do well in this district. Amongst Strawberries Black Prince does remarkably well here, also Keen's Seedling, President, and Sir Joseph Paxton.—JOHN PENSON.

Attingham Hall, Shrewsbury.—Our fruit crop is very irregular this year; the frosty nights in April destroyed the greater portion of the bloom, and what fruit did set was severely checked by the dry weather in May and June; quantities of it too have dropped off; especially is this so in the case of Apples and Plums, which in some places are scarcely half a crop. The fruits, too, are generally small. The showery weather that set in on June 29 was in time to save the crops of soft fruits such as Strawberries, Raspberries, &c., which previously were small and almost dried up. Hemskirk (ripe July 18) and Moorpark Apricots and Kaisha Peach are bearing good crops. Peaches and Nectarines are good; Early Louise Peach is the earliest we have; it was ripe on July 20. Hawthornden, Orange Pearmain, Blenheim Orange, Wheeler's Russet, Winter Greening, Bess Pool, Belle Fleur Brabant, and Conquest de Wygers are amongst the best bearers this year amongst Apples. Plums on a west wall are a moderate crop; the best bearers this year are Victoria, Early Orleans, Diamond, and Green Gage. Damsons are thin. Cherries (Morello and Red Kentish) are bearing full crops, other kinds very thin. Amongst Strawberries, Black Prince for early, Keen's Seedling and President for main crop, and Elton and Eleanor for late crops, are kinds that do well with us. Amongst Raspberries, Prince of Wales, Falstaff, and Victoria are good. Gooseberries and Currants of all kinds are a very good crop. Filbert Nuts and Walnuts all above the average. Figs better than during the last few years.—GEORGE PEARSON.

NORTH MIDLAND DIVISION.

Thoresby Park, Ollerton.—Bloom was abundant, but hurt by the cold, cutting, dry, east winds to which it was subjected, and although many fruits set and appeared to be all right, they succumbed to the frost which we had in the end of April. All the nets we had did not ward off the cold winds, which in the case of nets with a large-sized mesh are more cold and cutting inside than outside; something a little closer in the way of protection is better. Of Apples late in blooming we shall have a fair average crop; Pears are scarce. Of dessert Cherries we have half a crop; Morellos

on north walls good. Plums are a failure. Apricots under a 2-foot-wide glass coping, and from that canvas to the ground, are a good crop. Strawberries plentiful and good; other small fruits fair crops.

EARLY POTATOES are very good, and there is no appearance of disease. We attribute our good crop to the copious waterings we gave them when the weather was so dry; they never got a check, and we have no second growths. Field Potatoes look well in this neighbourhood, and I hear no complaints with reference to disease.—A. HENDERSON.

Kingston, South Notts.—Pears, Plums, and Damsons this spring were completely covered with bloom, but in one night (April 23) our hopes of a fruit crop were completely blasted, 7° of frost proving too much for the bloom when fully developed. We have therefore no Pears, Plums, or Damsons. Peaches have fared better on trees not in the best of conditions. We have a fair crop. These were protected by a double ply of herring net when in flower. Apricots set an abundant crop, which promises to swell up into fair condition. Some kinds of Apples, especially the late varieties, show very good crops, but many of the trees during the hot dry month of June dropped quantities of fruit. The varieties showing heaviest crops are Dumelow's Seedling, Northern Greening, Cox's Orange Pippin, Lord Suffield, and Keswick Codlin. Strawberries flowered abundantly, but the dry weather of June was almost too much for them; however, rain came in time to save what turned out to be an excellent crop; the same may be said of Raspberries; Black Currants were a light crop, but good in quality; Red Currants a heavy crop and clean.

POTATOES on heavy land have seldom been in better condition.—J. W. BAYNE.

Lenton Hall, Nottingham.—Fruit crops hereabouts are only middling, and more especially so as to orchards, which are almost fruitless. The gardens here lie high and dry, and, therefore, we have a good crop of Apricots, Raspberries, Gooseberries, and all the Currants, also a full crop of Cob Nuts, and Strawberries, too, are a heavy crop, but they all came in together and were secured at about two gatherings. Apples in the gardens are fair crops; Pears also; but of Plums we have very few. In the orchard, which looks north-west and lies cold, though with good top protection from wind, there is comparatively no crop; of Apples there are very few; Pears fewer; and Plums and Damsons none. In this department it is a bad look out for us for the coming winter, and an Apple of which I can speak well is Duchess of Oldenburgh, sometimes called Russian Apple; we have two trees of it which bear alternately one one year, the other the next, and so on—a very convenient arrangement. Good Strawberries are Black Prince, President, James Veitch, Sir Charles Napier; good Raspberries, the true Fastolf and Northumberland Filbasket, the last best of the two; and sure-bearing Pears, Jargonelle, Williams' Bon Chrétien, and Louise Bonne of Jersey. There is no Plum like the Victoria for bearing.—N. H. POWNALL.

Shipley Hall, Derby.—The severe frosts and chilling winds which we experienced in March and April effectually destroyed our fruit prospects. So intensely severe was the weather for several weeks, that the chances of trees, although profusely bloomed, bearing a crop were few indeed, and of the correctness of this statement we have unfortunately too conclusive evidence in the bare condition of the trees, both on walls and in orchards, Apples, Pears, and Plums being alike in that respect. Morello Cherries are, as usual, a full and fine crop. This, I may remark, is the only fruit that really pays for attention as a wall tree in this locality; the sweet kinds of Cherries dropped to a fruit during the stoning period. Of Currants and Raspberries there is an excellent crop both with us and around here, but Gooseberries are almost a failure through the previous mentioned cause. Strawberries are an abundant crop, but, owing to the protracted

drought which occurred in June, the fruit runs rather small. I last year made special mention in my report of Hélène Gloede as a fine late variety, and the longer I grow it the more impressed I am with its usefulness in our very variable climate.

POTATO crops are excellent, and up to the present I have not seen or heard of disease.—WM. ELPHINSTONE.

Bloxholm Hall, Sleaford.—Our fruit prospects are not good. On April 20 we had 9° of frost and sharp frosts for several nights in succession, which completely destroyed all our Pears, Plums, and Cherries. Gooseberries are a fair crop; Strawberries excellent, also Raspberries, but the two latter were of short duration, owing to the very dry weather which we had when the fruit was ripening. Red, Black, and White Currants are fair crops, and the same may be said of Apples; those doing well with us this season are Allen's Everlasting, Court pendu Plat, King of the Pippins, Sturmer Pippin, Wyken Pippin, Betty Geeson, Keswick Codlin, Manks Codlin, Hawthornden, both early and late varieties; Lord Suffield, Northern Greening, Stirling Castle, and Warner's King, all of which generally bear well in this neighbourhood; Apricots on walls where protected with frigi domo are a good crop; also Peaches; Green Gage Plums, too, where protected on walls are a fair crop, but in our neighbourhood, where no protection was used, Apricots are a complete failure; Walnuts are an abundant crop, but small Filberts a poor crop.

EARLY POTATOES were a fair crop and excellent quality, but rather small; second crop good; late crops are looking well. We have heard to-day that the disease has made its appearance in some parts where the ground is wet and shaded.—D. LUMSDEN.

SOUTH-WESTERN DIVISION.

Marston, Frome.—Up to about April 21 there was every prospect of good fruit crops generally, but the severe frosts experienced then completely changed matters. Pears are the greatest failure; on these, although we have trees on walls in various aspects, there are scarcely any fruit. The notable exceptions are Glou Morcean, Summer Beurré d'Arenburg, Doyenné Boussoch, Huyshe's Victoria, and Josephine de Malines. The small late blooms on several trees escaped injury, but the fruits resulting are small and poor. Apples vary considerably, the later blooming sorts only carrying good crops; hence we see about one-third of the trees in various gardens and orchards bearing very heavy crops, while the remainder are without any presentable fruit. The heaviest crops on garden trees consist of Lord Suffield, Carlisle Codlin, Hawthornden, Cellini, King of the Pippins, Adam's Pearmain, Irish Peach, (very good), Early Harvest, Court pendu Plat, Tower of Glamis, Norfolk Beaufin, and Lord Derby. Plums are very scarce indeed, but we have a few fairly well cropped trees of Victoria, Early Rivers, Early Orleans, Coe's Golden Drop, and Prince Engelbert. Peaches and Nectarines unprotected are a complete failure, while on protected trees there is a fair sprinkling of fruit; some of the best are Grosse Mignonne, Bellegarde, and Barrington. None of the newer early sorts are cropping well. Apricots unprotected have but few fruit, but those protected with glass copings and blinds are perfecting heavy and valuable crops, and even those under trebled fish-nets are carrying a good number of fruit. Moorpark, Hemskirk, and Orange are all good. Cherries, including Morellos, are, or have been, very lightly cropped; in fact, I never saw poorer crops, of the latter especially. Figs were very promising, but the embryo fruits were nearly all destroyed. Nearly all the tips of the Walnuts were killed, and they are very unfruitful accordingly. Of Filberts there is a fairly good crop. Crops of small fruits have been exceptionally heavy, Gooseberries being the only exception, and even of these in some gardens there has been abundance. There are wonderfully heavy crops of Red, White, and Black Currants, and Rasp-

berries have also been fine and plentiful. The early blooms of Strawberries were destroyed, but in spite of that we had fairly early and remarkably heavy crops. Failures there were none, but the lightest crops were in the case of Sir C. Napier, and the heaviest in that of Keen's Seedling, Sir Harry, Sir J. Paxton, President, and Dr. Hogg. The soil hereabouts is heavy, and in our case not well drained. Ours cannot be described as a good fruit soil, and the district is peculiarly liable to damage from late frosts.—W. LUGDEN.

Moreton, Dorchester.—Fruit crops here are not good. All promised well in early spring, but April was unusually cold, with severe frosts nightly from the 17th to the 27th, and these not only injuriously affected some of the fruit crops, but also some of the early crops of vegetables. Pears, Plums, and Cherries, which were in full bloom at that time, are in most places a failure; in some gardens there are a few. Apples, which bloomed later than usual in consequence of the cold, are better, and many trees are bearing good crops, though the crop generally is not nearly so heavy as that of last year. Peaches and Nectarines are good where they had a covering or coping of glass, but without protection they are a failure. Strawberries have been abundant and good in size and flavour; Raspberries good; Currants of all sorts good; and Gooseberries most abundant; Figs not good.—D. UPHILL.

Cotthelstone, Taunton.—Thanks to ample protection, we have a good crop of Apricots, the Musch-Musch particularly so. Apples are a good crop generally; our best sorts this year are Hawthornden, Lord Suffield, Cellini, Cox's Pomona, Cox's Orange Pippin, Golden Noble, Glamis Castle, and Alexandria. Pears are nearly a failure. We have a few Marie Louise and Beurré Rance; we can almost count upon the fingers the number of fruits on other sorts. Strawberries, with the aid of an ample water supply, have been abundant and good; Sir Joseph Paxton and President are our most reliable kinds. Figs are a full crop in most places; Morello Cherries are a good crop, as are also Raspberries—Carter's Prolific producing some wonderfully fine fruit; bush fruits are plentiful and good; Walnuts good. I should have said that the only Plums we have are on a tree of *Magnum Bonum*, which is carrying a full crop. The same tree has borne regularly every year; it is growing on a wall facing the west.—J. C. CLARKE.

Royal Nurseries, Merriott.—Plums, the fruit so much sought after for preserves in this neighbourhood, are very scarce; even on wall trees there are very few; we have only a few Orleans. Of Cherries and also Pears we have none. Strawberries we have had in enormous quantities, Keen's Seedling and Héricart de Thury coming in first, followed quickly by President, Oscar, Sir Joseph Paxton, Premier, and Sir Chas. Napier, with Eleanor, a fine and good fruit, and Goliath coming in late. Out of some scores of varieties we find none to equal the sorts just named for productiveness, quality, and general utility. Of Red, White, and Black Currants we have had enormous crops, especially of the Red, but in this neighbourhood a good many growers complain of blight attacking the Black Currants, which have greatly retarded the maturing of the fruit. Of Apples we have a fair crop, but nothing like that of last year. Many trees in the orchards hereabouts are very poorly cropped, especially kinds which were loaded last year; other trees have good crops. Some of our pyramidal, trained, and dwarf bush trees are carrying good crops of fruit of excellent size and appearance, and especially sorts which we have grafted on the *Pommier de Paradis* stock. We notice good crops of Keswick and Manks Codlin, Lord Suffield, Pott's Seedling, a great rival of the preceding sort; Golden Winter Pearmain, Golden Noble, Baron Ward, a variety called by the Apple congressmen *Dumelow's Seedling*, but so called wrongly; Stibbert, Golden Spire, Blenheim Orange, &c. There is a fair crop of Peaches, Nectarines, and Apricots in the neighbourhood.

THE POTATO fungus has made its appearance in some localities, attacking especially the earlier

kinds, and we are afraid if this weather continues that it will greatly extend its ravages.—JNO. SCOTT.

Wilton House, Salisbury.—Apples a good crop, especially such varieties as Early Harvest, Quarrenden, Lord Suffield, Cox's Orange Pippin, New Hawthornden, Margil, Yorkshire Greening, Nonpareil, Alfriston, and Dumelow's Seedling. Apricots a fair crop where protected by wide glass copings and woollen blinds; where unprotected, none. The most reliable varieties are, Large Early, Hemskirk, and Moorpark. Cherries a moderate crop on walls, none on trees in the open garden. Currants abundant. Figs a light crop. Gooseberries very variable; in some situations abundant, but in others, especially where fully exposed, very light. Peaches and Nectarines good crops where protected by glass copings and woollen blinds; where not so protected, none. Early Beatrice Peach ripe July 12, of medium size and fair flavour. Nuts a good crop. Pears very poor both on walls and in the open garden—the lightest crop within the last quarter of a century, caused by the severe frosts and wet weather which occurred during the blooming period. Plums a light crop on walls; none on trees in the open garden. Raspberries a good crop. Strawberries an abundant crop, the best varieties being Auguste Nicaise, Sir Joseph Paxton, President, British Queen, and Elton Pine. Walnuts a poor crop. The greater part of the gardens in this district are situated in low-lying valleys, where a continuous damp atmosphere invariably prevails during the spring and autumn months, which makes fruit growing without protection very precarious. Many and striking instances are this year afforded in this neighbourhood of the value and advantage of placing gardens at moderate elevations, where crops if not great are by no means such failures as in the valleys.—T. CHALLIS.

Longford Castle.—The fruit crop, except Strawberries and bush fruits, which are plentiful, and Peaches, Nectarines, and Apricots, which had their blossoms protected with blinds raised and lowered by means of ropes and pulleys, is a failure hereabouts this year; the severe frosts of April, following an almost unprecedentedly mild winter, destroyed the promising prospect of a good all-round fruit year. Our soil is light, resting upon a gravelly subsoil, and close to the water, and the situation being low and damp, we suffer considerably from the effects of late spring frosts.—H. W. WARD.

Prideaux Place, Padstow.—The fruit crop in this part of the country may be fairly described as a good one, very few kinds being below the average. The dry spring and early summer, however, slightly affected the Strawberry crop, causing the fruits to come rather small. Apples over the average, especially on low bush trees in the kitchen garden; Apricots none grown; Cherries an average crop and good in quality; Currants and Figs over the average; Gooseberries an average crop; Nectarines and Peaches over the average; Plums under the average; Pears an average crop; Strawberries plentiful, but small.

POTATOES are a good crop, and so far free from disease. We have had a delightful summer, and the rainfall has been much less than usual, though there have been some welcome rains during the past three weeks. The country around here is looking well, and harvest has commenced.—JOHN C. TALLACK.

Sherborne Castle, Dorset.—We are low down in the Vale of Blackmoor, and therefore have to contend with an excess of irrigation, and nearly every year with spring frosts. We are fairly well sheltered from east winds by the wooded grounds which lie around the castle; our soil is silicious on limestone. On the 10th of April we experienced a killing frost, and our general crop is therefore rather below than above the average. Apples in gardens will be few and small, but in orchards they are better, owing to the trees coming into bloom ten days later. As a rule, the follow-

ing varieties do best with us, viz., Lord Suffield, Keswick Codlin, Manks Codlin, Hawthornden, Echlinville Seedling, Northern Greening, Cox's Pomona, Cockle Pippin, Golden Winter Pearmain, Cox's Orange Pippin, Yellow Ingestre, Kerry Pippin, and Downton Pippin. Apricots are good, the best we have had for years. Cherries are thin, but what we have are very fine. Pears are nearly a failure and much deformed. Plums are conspicuous by their absence. Of Peaches and Nectarines we have a meagre sprinkling on walls, and they are very late. Of Figs we have none too many, and of bush fruits a very partial crop. Strawberries have been most plentiful and fine as regards size and flavour. President and Sir Chas. Napier are the favourites hereabouts for outdoor use, and Vicomtesse Héricart de Thury for forcing.

POTATOES are very good in quality, and we have heavy crops with little or no disease. Our best are the old Ashleaf to begin with, Lady Paget, a good variety of the Lapstone section for mid-season, and then the Scotch Champion, the latter the poor man's Potato in this locality.—W. G. FRAGNELL.

NORTH-WESTERN DIVISION.

Waterdale, St. Helens.—The fruit crops in this neighbourhood are very irregular and far from satisfactory. In sheltered situations they are fairly good, but where exposed the bloom all perished. Peaches, Apricots, Pears, and Plums on walls are very thin; we had plenty of bloom, and the prospects for a crop were promising till the end of April, when the east winds and keen frosts destroyed every expanded bloom. With respect to standards, Pears, Plums, and Damsons are all but minus, and the same may be said of the better sorts of Apples; even the hardier varieties are but a light crop; Raspberries and Currants carried an average crop, but the fruit was small and poor and had evidently suffered from late frosts; Gooseberries are a very good crop, and although Strawberries lost many of the earliest blooms a good average crop was the result. On our cold clay subsoil Vicomtesse Héricart de Thury, Sir Joseph Paxton, and President still keep the lead as the best croppers.

THE POTATO crops, which are numerous around here, being stimulated by the late rains, are vigorous and one sheet of fine healthy blooms, giving prospects of a very satisfactory crop.—JAMES SMITH.

Haigh Hall, Wigan.—Fruit crops in this district, with the exception of small fruits, are very much below the average. Plums are almost a total failure, and the trees are infested with aphides. Pears are very thin; Jargonelle, Marie Louise, Louise Bonne, Beurré Diel, and Easter Beurré on south walls carry a few; on standards and espaliers there are scarcely any. Apples are very much below the average; Lord Suffield, Small's Admirable, Cox's Pomona, Keswick Codlin, and a local variety are producing about half a crop. Cherries are very thin except Morellos, which are a good average crop. The Peach, Nectarine, Fig, and Apricot are not cultivated hereabouts out of houses. Gooseberries are about an average crop. Strawberries and Raspberries abundant and larger than usual; they have, however, suffered from the heavy rains during the last few weeks. Black Currants good; Red and White below the average.—ANDREW JAMIESON.

Abney Hall, Cheadle.—Strawberries have been our best crop here, and they were good in quality; Gooseberries also and Raspberries have been very good; Black and Red Currants moderate, the former being somewhat injured by blight, and some of the bushes have been affected by the insect in the bud; Plums are a failure; Pears and Apples are much under the average, the latter better than the former; Cherries are a moderate crop; of Peaches, Nectarines, and Apricots outside we have next to none.

THE POTATO crop, however, is looking well. The early portion lifted has been moderate in quantity, but very good in quality.—ROBERT MACKILLAR.

EASTERN DIVISION.

Woolverstone Park, Ipswich.—It is somewhat remarkable that tender out-door fruits are this season more abundant than the hardier sorts, as while in most places there are full crops of Apricots, Peaches, and Nectarines, there are few or no Plums, and Pears are very thin, especially on pyramids or trees that have not a wall to protect them. The good set of Apricots and Peaches was owing to the fine weather in March, when the flowers were fully open and set freely, as did also those of Peaches and Nectarines, although many have since fallen through the frost, which has likewise affected Pears, as what few there are are deformed, or do not appear to be able to swell through contraction of the skin. The kinds with us that had the best crops are Louise Bonne of Jersey and Easter Beurré, the first named of which always does well. On walls our trees are on the Pear stock, but the pyramids are on the Quince, for which our soil is too light, as it is a sandy loam, but we do very well by mulching heavily, a practice I can strongly recommend, as it is a great aid towards growing good fruit. Apples are thin, as many dropped, but those left promise to be fine and are now swelling fast, the heavy rains having soaked the thirsty ground and well washed the foliage. Bush fruit has not been over plentiful, for the frost caused many of the Gooseberries to fall, and Currants have been badly affected with aphides, which have been a great plague this season; they seized on every twig and shoot and injured the leaves. Strawberries suffered from the long drought, especially the Queens, which had mildew both on the foliage and fruit. Taking the season altogether, it is therefore not a good one.—J. SHEPPARD.

Hardwicke House, Bury St. Edmunds.

—The fruit crop, writing in general terms, is a failure. Seldom or never was it more promising till towards the end of April; fruits of all sorts promised an abundant harvest. So mild was the weather, so safe apparently the fruit, that not a few of the most timid and cautious cultivators resolved to leave the trees to themselves. The fruit was set, the leaves already produced in plenty; and protection becoming a useless source of weakness, an injurious encumbrance, not a few had removed it, when suddenly the thermometer fell from, in round numbers, 45° or 50° to 12° or 15°—a fall of 30° to 35°. The result of this sudden and continued fall of temperature was as already stated. Plums, Pears, and Cherries were completely destroyed, or so severely thinned as to result in general failure. Apricots shared the same fate unless where severely protected. Peaches and Nectarines suffered less severely, and probably half a crop remained on the majority of the trees in the open air that were protected by boughs during the frost. As to any varieties that may have stood the frost better than others, the cold was so severe as to have levelled down such distinctions. Plums and Pears are stripped alike on walls and in the open. We have, however, a few on a Beurré Diel on an old wall near the furnaces for our chief boilers. Possibly the smoke, and even the heat from these, as well as the loss of heat from some glass houses kept at stove temperature, may have favoured a more genial local atmosphere, and so saved these. Another curious point that I have frequently noted in previous seasons is the partial escape of Peaches and Nectarines and the total destruction of Apricots side by side on the same wall under identical treatment. I have noted this before, and it assuredly points to the fact that Apricots are more tender than either Peaches or Nectarines. At first I was disposed to attribute this to the downiness of the Peach; but then the smooth skinned Nectarines were at hand to destroy this theory before it was half formulated. Constitutionally, the Peach and the Nectarine are more hardy than the Apricot. A good deal has been said about the amount of frost the blooms or young fruit of these will bear with impunity. Under a flimsy protection of boughs the embryo fruits of Peaches and Nectarines have endured 18° of frost, and are now, as already stated, about half

a crop; but why half, and not a whole one? Why, indeed? Well, a good deal of this may be explained, but not all. All the most exposed fruit or blossoms were cut off clean as if with the touch of fire. But the converse is not equally true or general. Not a few of fairly protected fruit perished, while others, and apparently not more or better protected, were totally destroyed. And then, again, why should Plum blossoms or embryo fruit be more tender than those of Peach or Nectarine? Such fine Plums as Golden Drop, Jefferson's, Blue Impératrice, and others on walls treated in all respects like Peaches and Nectarines are plumless while the two latter have half a crop. The state of the Apple crop is even more difficult to explain; no bloom was expanded during those killing severe April frosts. Cultivators encouraged each other with the remark, "Bad as it is, it might have been worse, for the Apples are safe." But they are not; in not a few gardens and orchards they are almost as scarce as Pears. In few of the most highly favoured places are they more than one-third of a crop. Were they to cease falling even now perhaps the latter would be our fortunate lot. The Apples blossomed well, and seemed to set fairly, but they did not, and from the time of apparent setting they have dropped, dropped, and still they fall. Complaining of this to a large cultivator the other day, he remarked to me, "How fortunate you are to have any to fall; we have none." In travelling through considerable districts of country it is impossible not to be struck with the erratic character of the Apple crops; generally there is a total failure, and yet every now and again trees or groups of trees laden down with fruit occur in situations where neither special shelter, varieties, nor culture seem to afford any clue to this exceptional success. In other cases, however, special shelter and favourable sites explain the crops at a glance. As to varieties of special hardiness and frost-resisting power, the frost, as already remarked, seems to have been too severe for these to tell for much. With us, however, the Lord Suffield, the Irish Codlin, and the new Hawthornden have the best crops on pyramids and cordons. Once more, though not so prominently apparent, the diamond and spiral cordons have more fruit than trees of other shapes among the Apples where protected in any way; they must also have been injured in bud, for hardly any of them were in bloom till some weeks after the severe frosts. Now it is so generally held that closed Apple blooms are frost-proof, that those who hold to that theory attribute much more of the failure to the long continued drought than to the frost. No doubt a season in which only about 6 inches of rain fell in the first six months of the year is far too dry for Apples, and part of the continuous fall of the crop may have originated in that cause; it is, however, more than doubtful if they would have fallen had they not been frozen more or less severely through the core first. The small or bush fruits here escaped the blighting influence of the frost almost by a miracle. Frosts of far less severity have often blackened the Gooseberries and blighted the Currants; but this season only a few on the crowns of the bushes were destroyed, and the crops have seldom been heavier or better in these gardens. This is, however, not universally the case, though it is probable the returns for the whole country would reach to a full average of small fruits. Raspberries were far above an average show, though the long-continued drought cut down the crop considerably in weight. Strawberries were an average crop, though the season was seriously shortened and also lightened towards the close by the drought.—D. T. FISH.

YORKSHIRE.

Wortley Hall, Sheffield.—The prospects of all kinds of fruit crops were good here in spring, but the frost destroyed them to a great extent in April. There are few Pears, Cherries, or Plums, but Apples are a fair crop; Peaches good indoors. Gooseberries, Currants, and Raspberries were much injured and are scarce; Strawberries

POTATOES are yet free from disease, but the crop is lighter than usual, owing to the want of rain at the right season.—J. SIMPSON.

Ribston Hall, Wetherby.—Apricots with us are very good; Apples, Pears, and Plums below the average; Peaches and Nectarines are an average crop; Cherries and Walnuts below the average; Medlars very good; Filberts none grown hereabouts; Black, White, and Red Currants, Gooseberries, and Strawberries all good. Our garden leans to the south, and is well protected on three sides by large trees; soil light, sandy, and well drained. The varieties of fruit trees that do fairly well here are Royal George and Noblesse Peaches, Moorpark and Early Hemskirk Apricots, and Elruge and Violette Hâtive Nectarines. The Purple Gage and Coe's Golden Drop are the only sorts of Plums bearing fruit with us this year, but Victorias, Kirke's, Jefferson's, and the Green Gage sorts do well with us in ordinary seasons. The sorts of Pears that are bearing a little fruit are Jargonelle, Williams' Bon Chrétien, Jersey Gratioli, Beurré d'Amanlis, Eyewood, Passe Colmar, and a few others. Amongst Apples the best are Keswicks, Manks, and Dutch Codlins; on Juneating, Bridgewater Pippin, Lord Suffield, Ribston Pippin, and Cockpits there is a light crop. The frosts of May 2, 6, and 19 made sad havoc with the Plum and Pear bloom in the neighbourhood.—THOMAS JONES.

Brantingham Thorpe.—Our crops this season of Peaches, Nectarines, Apricots, and Apples are generally good; they are clean and healthy, and promise to be of good size and quality. Raspberries and Strawberries are the crops of the season, abundant, and the fruit is of large size and fine in flavour. Pears are a very partial crop both in garden and orchard. In this chalk district immense quantities of the Hesse Pear are grown in orchards for market, but this season the crop generally is very light. Gooseberries, Currants, Walnuts, and Filberts are good crops.—R. KINGSTON.

NORTHERN DIVISION.

Seaham Hall, Sunderland.—Apples here are scarce on almost all kinds of trees; Lord Suffield, Ribstons, and the various Codlins are bearing fairly good crops. All kinds of Pears are scarce; some few fruits are to be seen. Plums and Cherries do not fruit on this east coast. Currants and Gooseberries are good crops. Raspberries are a good crop, although at one time when in flower they seemed to be about dried up, but since the rain they have recovered wonderfully. The same may also be said in reference to all kinds of fruit crops. At one time the aphids quite covered the trees and damaged the fruit. Our soil is a mixture of sorts lying upon limestone rocks. The gardens here are somewhat protected by trees, but are subject to east winds and sea breezes.—R. DRAPER.

Shawdon, Northumberland.—The fruit crop in the north of England this season is, taking it as a whole, the most unsatisfactory that I have seen for several years; I am referring more especially to Apples and wall fruits. Had it not been for the severe frost which we experienced in April Apricots would have been plentiful in this district; where protected, the crop is an average one and the trees are healthy. The same cannot be said of Pears; they are all but an entire failure; many varieties that have never failed in former years have not a single fruit upon them this season. Cherries were attacked early in spring by black fly to such an extent that the fruit was spoiled for table. Peaches we have ceased to take account of; there are several places in this county where they are carefully protected, but this season no kind of material was sufficient to protect them from the hoar frosts of April; on the 13th of that month the thermometer here registered 15°, and for several successive nights the weather continued to be severe. It was expected that the Apple crop would escape, as the trees did not blossom early, but this expectation has not been realised, for a more complete failure I have seldom seen. Not

only in this district has the crop failed, but it is the same in Durham and Yorkshire. Here the trees in the early part of the season were affected with red spider, the consequence of which was that the greater part of the few fruit which we expected to gather have fallen. Small fruits appear to be partial in some places. Gooseberries are a fairly good crop, and the same may be said of Currants and Raspberries. Strawberries appear to be the exceptional crop of the season; they are generally small, but plentiful. Plums are usually an uncertain crop in the north. Every successive season confirms the conviction that all the old and well-tried varieties of Apples, such as the Cockpit, Devonshire Quarrenden, Lord Suffield, Hawthornden, Keswick Codlin, Bedfordshire Foundling, &c., are the only varieties that we can depend upon for a crop in such seasons as the present. The number of Pears that really come to perfection in favourable situations in this district is very small. Williams' Bon Chrétien, Jargonelle, Early Beurré, Gansel's Bergamot, Beurré Superfin, Louise Bonne of Jersey, and Marie Louise are our best varieties, but they have failed this season; not one tree of the above-named sorts has more than a dozen Pears upon it. As far as my observations have gone, I believe the Apple and Pear crops are the worst that I have ever seen. The remarkably mild winter has succeeded by a spring, cold and ungenial; the heavy showers of sleet and snow that we experienced checked vegetation and cooled the earth; the consequence of which was that red spider attacked the trees and bushes in many places. There is no doubt that 1884 must be added to the list of comparatively fruitless years, at least in the north.—JAS. THOMSON.

Castle Gardens, Alnwick.—Here fruit is inferior in flavour compared with the produce of southern counties; at least such is the case with Pears, Apples, Peaches, Nectarines, and Apricots. Last year Apricots were scarce; consequently we have the benefit of a full crop on several trees this year. Of Apples we have a good sprinkling generally. The following are bearing only light crops, viz.: Keswick and Manks Codlins, Pott's Seedling, New Hawthornden; Lord Suffield, Northern Greening, Golden Pippin, Echlinville Seedling, Gloria Mundi, Red Calville, and King of the Pippins. Of Pears, in consequence of having the heaviest crop last year that the trees have produced for these ten years past, and of first-class quality, the bloom this spring, with some few exceptions, was somewhat scarce. Our best sort is Louise Bonne of Jersey, which bore an extra heavy crop last season, and again a good crop this year. I can highly recommend this Pear and Marie Louise for planting in the north. The two varieties combined will keep a table well supplied for six weeks or seven weeks with Pears of the very best flavour. The following are good dessert Pears, viz.: Jargonelle, Brockworth Park, Beurré Colmar, Beurré d'Amanlis, Glou Morcean, Josephine de Malines (very fine), Beurré Rance, Easter Beurré, Beurré Clairgeau (best for the kitchen), and Flemish Bon Chrétien; the last, all points considered, is one of the best Pears for culinary purposes. The following are not worth growing, at least hereabouts, viz.: Beurré d'Aremberg, Dunmore, Citron des Carmes, Beurré Delaux, Chaumontel, Beurré Spence, and Beurré Diel (not good for dessert). Of Peaches the following are bearing good crops outside, viz.: Prince of Wales, Dr. Hogg, Stirling Castle, and Royal George; and amongst Nectarines, Elruge, Hardwicke Seedling, Pine-apple, Pitmas on Orange, and Prince of Wales. Some of the trees were protected with double herring-net, others with frigi domo. Both are equally good this year, but we did not experience the severe frost when the trees were in bloom as occurred in the south, 7° being the most we had in March; the trees are now in grand health. Plums are scarce. Golden Gage is a useful dessert Plum and free bearing; Jefferson, Victoria, and Prince of Wales are bearing crops, and there are a few on others. Green Gage does not do well here, even on a south aspect. Of Cherries, May Duke is producing a good crop, and

on Morellos, Black Tartarian, and Bigarreau there are a few; the last seldom bears a good crop. Raspberries and Black and White Currants are abundant; of Gooseberries we have a light crop. Strawberries on light soils where grown for market suffered from want of rain in May and in the early part of June, but much of the best fruit damped off during July through excessive wet, especially President, a great quantity of the best fruit of which has not ripened. Sir J. Paxton has proved to be the very best; MacMahon, too, is good. Duke of Edinburgh is worthless compared with the varieties just named.—GEORGE HARRIS.

Raby Castle, Darlington.—Apples here are much below the average, and Pears are by no means a good crop, except a few kinds, notably Louise Bonne of Jersey, Beurré d'Aremberg, and Glou Morcean, each of which is bearing a good crop. Apricots are very good; of Plums we have very few of any kind, though the trees were a sheet of bloom. They were severely injured by the two severe frosts which we had of 7° and 8° respectively in the middle of May. The growth both of the trees and wood is very stunted, and badly affected by aphides. Cherries of all kinds are a light crop; Raspberries good; Currants of all sorts superabundant. Of Gooseberries we have but few; Strawberries excellent; Peaches and Nectarines not grown here on open walls, nor Figs. The walls here are well sheltered on all sides by forest trees, and no other shelter is employed, except for Apricots, which are trained on heated walls, the only means of insuring an every year crop, from the fact that in all kinds of weather the bloom can be kept dry, which is the secret of success. The soil here is of great depth, very dry, and the gardens have a sharp fall to the south.—R. WESTCOTT.

PLANTS IN FLOWER.

Menziesia polifolia alba.—I find this to be one of the most beautiful and useful plants grown out-of-doors. It flowers from June to November, and is invaluable as regards furnishing cut flowers. I have plants of it about 2 feet through now full of flowers.—FRED. PERKINS.

Romneya Coulteri.—From Glasnevin come some fine flowers of this lovely Californian Poppywort. The snow-white flowers are fully 6 inches across, crumpled, and shining like satin. The tuft of stamens in the centre is like a golden tassel set in white satin. This plant is flowering admirably this year at Glasnevin planted against a west wall. The plant is producing an abundance of flowers on strong shoots proceeding from the base of the stem.

Hyacinthus candicans.—When well grown this is one of the most beautiful, as well as one of the noblest of bulbous plants in the garden in August. We have seen an instance of its fine growth during the week. Mr. H. Stevens brings us from his garden at Adlestone a stout stem measuring not less than 7 feet in height, and carrying no fewer than fifty-three flowers. Mr. Stevens has other examples almost as fine, which now are hung with ivory-white bell-like flowers.

Paronychia argentea.—This pretty plant, now in full flower and well adapted for hanging over vases, is one which I think is very little known. We have grown it here for very many years. It was brought from Nazareth by the late Sir Robert Inglis. Our plant of it hangs over a vase about 2 feet 4 inches, is 20 inches wide, and one mass of silvery flowers. We treat it as a bedding plant; I have had it stand out all winter in a mild season.—JOHN GARLAND, Kilberton, Ex ter.

Border Carnations.—A gathering of some seedling border Carnations sent by Mr. E. Woodall, from his garden at St. Nicholas House, Scarborough, contains some uncommonly fine varieties, the best of which have been named. All are characterized by large, full flowers, and are said to possess a vigorous habit. The best, we think, are those named Gem, white, flaked and edged with crimson; Clarissa, soft sulphur-yellow, flaked with carmine; Catherine deep crimson; and John Harrison, pink, flaked and spotted with deep red and crimson. There is so much interest attached to raising Carnations from seeds that the wonder is that amateurs generally do not practise it; oftentimes varieties of great merit are produced in that way.

Campanula turbinata.—It is not often that this lovely Campanula is so plentiful in a garden that it can be used for an edging to the borders, but should anyone have a good stock of

it, it should be used in this way, as it makes one of the most beautiful edgings imaginable. In the Pilrig Park Nursery, Edinburgh, we lately saw a walk edged on both sides with a broad line of a dark purple flowered form of this Campanula, and we thought at the time that it was one of the most beautiful sights we had seen in a garden. The whole lines were perfect masses of cup-like flowers, and the walks seemed glowing with purple. The rapidity of the growth of the plant favours its use in this way, as Messrs. Dickson assured us that this edging had been planted out two or three seasons.

Mesembryanthemums.—There is an abundance of useful garden material lying unused in the hundreds of kinds of Mesembryanthemums which are at present relegated to botanical gardens. The brilliant colours of the flowers of many of them—flowers, too, which are large in size and handsome in shape—would add largely to the charm of our outdoor summer gardens and to that of the greenhouse in winter and spring. We saw at Kew the other day several large beds of these plants, amongst which there is great variety both in leaf and habit, whilst their flowers are many of them of dazzling beauty. Like many of the plants whose homes are in the sunny regions of South Africa, Mesembryanthemums display their beauty to the full only when the sun shines upon them. Such a character, however, does not detract from the usefulness in a garden sense of a large number of species belonging to this genus.

Cladrastis amurensis.—Of this rather rare tree a fine flowering branchlet has been sent to us from Messrs. Cripps' nursery, Tunbridge Wells, where it is considered a highly ornamental tree of moderate size, quite hardy, and very free flowering. The foliage is much smaller than that of the common *Cladrastis tinctoria*, or Yellow Wood, the leaflets being only about half the size. The flowers are produced in dense spikes 6 inches in length, and are poised almost erect upon the branches, which are disposed in a tabulated way. The colour of the small pea-shaped flowers is white, with a slaty purple tinge upon the calyx. It is therefore not a very showy flowered tree, though the handsome foliage renders it quite worth planting for ornament. This tree has been highly ornamental this season at Kew. A couple of specimens about 10 feet in height in the arboretum were densely furnished with bloom about a fortnight ago. It is also known as *Maackia amurensis*.

Primula sikkimensis.—Some cultivators are continually recommending this plant to be grown in the shade, as if it abhorred the sun. Such, however, is not the case, as we had an opportunity of seeing the other day in Messrs. Dicksons' Pilrig Park Nursery at Edinburgh. Here in the open was a large border full of plants of this Primrose just going out of flower. There must have been fully a thousand plants in the bed, and all were in the most vigorous health, as the foliage indicated. Some of the leaves were as broad as those of young Cabbages and the flower-spikes were stout and tall, surmounted by a large cluster of flowers. This bed was on the wane when we saw it, but when it was in full beauty, with hundreds of spikes of delicate sulphur-yellow flowers, it must have been a lovely sight. The soil appeared to be of a cool loamy nature, not particularly moist. Perhaps the cooler Edinburgh climate has something to do with the robustness of this Primrose; but, for all that, it is unquestionably, not essentially, a shade lover.

Lilies at Kew.—Suitable positions afforded by Rhododendron beds and those of other hardy Ericaceous plants for the cultivation of Lilies have been taken advantage of this year at Kew, and just now in some of these beds there is a fine display of *Lilium auratum* and several other kinds, some of the flowers being particularly large and handsome, and thus a charm is added to what in previous years has been dull and monotonous after the shrubs had bloomed. The preference of Lilies for the peaty soil, shelter, and shade obtainable in Rhododendron beds suggests an exten-

tion of this new feature at Kew to the majority of the numerous beds of similar plants which are scattered over all the gardens. Lilliums have generally failed at Kew, owing to the attempt to grow them all together in one special bed, but there can be no doubt as to the fitness of Rhododendron beds for the successful management of Lilies, a fact indicated by the healthy appearance and fine flowers of those now planted in such positions.

The Cape Marigold.—The name of this pretty Composite plant from the Cape of Good Hope is *Dimorphotheca pluvialis*. Considering the beauty which its flowers possess, together with the elegant growth of the plant, it is curious that it has not become popular in these days when the fashion for Daisy-like flowers is so high. The flowers are about the size of a crown-piece, of Daisy shape with yellow centre, and with pure white florets tinged exteriorly with purplish violet. The other day we saw a long row of it in the Pilrig Park Nursery, Edinburgh, where the Messrs. Dicksons grow it rather largely for supplying cut flowers. We saw the row on a bright sunny morning when every flower was fully expanding, showing nothing but the white. We saw the same row in the cool evening when every flower had closed, and the whole row was a broad band of purple—not the least beautiful phase of the plant's condition. We imagine that if this hardy annual was grown once in a garden, it would not be lost sight of. The day will come, we hope, when hardy annuals will regain their popularity.

Sarracenias at Kew.—A good representative collection of species and varieties of *Sarracenias* may now be seen at Kew. We never remember having seen better examples of *S. Cheloni*, *S. Stevensi*, *S. Drummondii*, *S. flava* and its varieties, and *S. variolaris* than may be found here, their colour and variegation being of a highly ornamental character. So far as treatment goes there does not appear to be anything very special in what has produced these fine examples—a house heated by the sun alone, there being no hot-water pipes in it, exposure to full sunlight all day, abundance of water both at the roots and overhead, and a compost of fibry peat and Sphagnum. These, with a close and high temperature early in the summer, to be succeeded by plenty of air as the pitchers mature, constitute an outline of the practice followed at Kew as regards *Sarracenias*, and that the details just alluded to are not far wrong is proved by the condition of the plants subjected to them. *Sarracenias* are wretched indeed to look at if not under happy treatment; whereas with proper management they may be made really beautiful objects.

Night-blooming Mesembryanthemum.—As regards the expansion of its flowers in the evening after the sun's decline and closing of them again in the morning, *M. noctiflorum* is one of a very few exceptions amongst a host of species of this genus, the flowers of which expand only when the sun shines upon them, closing again as the day declines. There does not appear to be any explanation of these singular phenomena. The *Nymphæas*, too, show the same difference in the expansion and reclosing of their flowers, and other plants, such as the night-blooming *Cereus*, *Cheiranthus*, *Oenothera*, &c., may be instanced as additional anomalies as regards flower expansion. In his work on "The Movements of Plants," Darwin seems to have overlooked this matter, confining his observations and experiments chiefly to the leaves and stems. It would be interesting to learn why one species should develop its flowers only under the influence of bright sunshine, whilst another, which does not appear to differ at all morphologically, develops its flowers only under exactly the opposite conditions. *M. noctiflorum* is a bushy species, with thick pointed leaves and flowers a little larger than a shilling when expanded. The petals are buff coloured outside and pale pink inside. It is flowering at Kew.

Lapagerias from Gunton Park.—Lovely wreaths of the red and white *Lapagerias* reach us from Lord Suffield's garden at Gunton

Park, Norwich, where Mr. Allan appears to be highly successful in cultivating them. These long slender sprays profusely laden with flowers have the form and purity of the Snowdrop and Snowflake, with the vigour and grace of a tropical climber. The flowers, borne in clusters of twos and threes at intervals of an inch or so, remind us of the glorious specimens we annually receive from Milnerfield. Mr. Allan possesses the best variety of the red and the very purest form of the white. He states that "the house in which they are growing, and which is attached to the mansion, was partially consumed in the fire that took place here in December, 1882; the plants at that time were much scorched and lost a great deal of foliage, but have now regained their former vigour. They are growing in a brick bed 8 feet square, divided into four divisions 2 feet 6 inches deep with a concreted bottom; a 3-inch drain pipe and 6 inches of rubble are placed thereon. Having no fear of the border becoming waterlogged, the plants are watered copiously during the growing and flowering period; in fact as freely and heavily as a modern Vine border. During winter the house is kept perfectly cold, merely the frost excluded and no water given, that the plants may be kept entirely at rest."

Senecios and other flowers.—I send you a head of bloom from a seedling of *Senecio pulcher* and others of *S. speciosus*. The former fine plant has bloomed unusually early this year, owing, no doubt, to the extreme mildness of last winter. I also send blooms of *Campanula Vidalii*; I think this a most attractive plant when it does well. The large orange *Hemerocallis fl.-pl.* is very useful from the great length of time during which it remains in bloom. I see that *Iris Kämpferi* is often spoken of as requiring a moist place; I have not found it so. Mine, grown from seed, have been very fine this year in good made-up soil, well watered when necessary. One of my seedlings was unusually lovely—clear ivory-white flushed with pale pink. Another plant that I at first found troublesome to grow is *Onosma tauricum*, but now, after several moves to find its true requirements, it is growing grandly. Its sweet-scented and graceful flowers make it a most desirable plant. *Erythraea diffusa* is another charming plant that after a little obstinacy has now consented to grow well with me.—H. STUART WORTLEY.

** The *Senecios* are particularly fine. *S. pulcher* has large and highly coloured flowers, and *S. speciosus* is a far finer plant than it is generally supposed to be. The specimens which Colonel Stuart Wortley sends are extremely showy. The *Campanula* is interesting, but not very showy.—Ed.

Phloxes at Pink Hill Nursery, Edinburgh.—The collection of late Phloxes in Messrs. Laird's nursery is this month in great beauty, but the early dwarf kinds are almost out of blossom. Enough flowers are, however, still left to show their effectiveness, few summer flowers giving finer masses of colour, which is quite equal to that of many of the tall growing kinds. Amongst others the following may be mentioned as of special beauty both as regards size and shape, as well as in the size and compactness of the truss of flowers. Amongst early dwarf kinds, we have Snowflake, pure white; Countess of Galloway, white, slightly tinted with purple; Rose of Castile, white, slightly tinted with lilac; Syren, shaded purple and white; Rev. Dr. Hornby, much the same colour; Mrs. Duncan, white, shaded purple; Lady Musgrave and Lady Napier, white; Mrs. B. Dunbar and Mrs. Dalrymple, rose and white striped and shaded, very distinct, the former having, perhaps, the largest individual blossoms; Venus, rosy lilac; Sunrise, rosy purple; A. McLeod, rosy lilac, very large; Colonel Flatter, shaded rose; Rosy Gem, deep crimson-rose; Mrs. W. Richards, rosy lilac; James Ross, light purple. These were all raised here, as were also the following late kinds, amongst many others of almost equal beauty: Lady Belhaven, pure white with rose eye, like Mrs. E. H. Wood, but finer, and almost larger still are Mrs. Nimmo and Mrs. John

Downie, of much the same colour; Wm. Tait Splendens, scarlet; Earl of Mar, scarlet; James Galloway, crimson-scarlet; Rubra, light red; Oscar Beyer, pink with dark eye, very large; Malcolm Dunn, rose, with dark eye; Mrs. Rowe, salmon-pink.—C. M. OWEN.

** With this note Miss Owen sends flowers of some exceptionally fine new varieties not yet named or distributed, all of which seem to be the perfection of good Phloxes.—Ed.

Anthurium Andreanum.—In one of the stoves at Kew may now be seen a rather large specimen of *A. Andreanum* which has assumed a habit very different from what in all published descriptions, both botanical and horticultural, we have been led to expect. In the *Botanical Magazine*, at tab. 6616, will be found a figure and description of this plant, the figure itself having been made from this identical specimen before it had assumed its present characters. Both here and in all other descriptions *A. Andreanum* is described as being creeping and tufted in habit similar to *A. Scherzerianum*. The following measurements, taken from the above plant, will show that, whatever may have been the habit of young plants of *A. Andreanum*, full-grown specimens are totally distinct from any of the tufted species of *Anthurium*. The Kew plant is growing in a large pan, in the centre of which a dead Tree Fern stem is placed with Sphagnum Moss fastened on to it by means of wire. Upon this Fern stem the stems of the *Anthurium* are growing, being firmly attached to the stem itself by means of node-roots, which are freely produced. The stem of the *Anthurium* measures 29 inches from the base to the topmost node; length between each node, $6\frac{1}{2}$ inches; length of leaf-blade, 17 inches; of flowers, $5\frac{1}{2}$ inches; width of flowers, 5 inches. There seems no reason why this plant should not prolong its climbing stem to an indefinite length; at all events, there is no appearance of a cessation of this climbing habit. It will from this be seen that *A. Andreanum* when allowed to assume its natural characters, and not cut back, as is generally the case, is a strong growing climbing species of *Anthurium*, more like *A. amplum* and *A. lucidum* than *A. Scherzerianum*. It will be interesting to learn if other plants of *André's Anthurium* have assumed the habit of the Kew specimen, or whether specimens of a distinctly tufted character have been grown without the growths being interfered with.—W.

SEASONABLE WORK.

FLOWER GARDEN.

SEDUMS.—All the hardy varieties of Sedums are usually classed as rockwork plants, a purpose for which they are admirably adapted, and perhaps so treated they are more at home than when used in any other way, but a few of them are so well suited for the parterre, and their use save so much time and space that would otherwise be required in the propagation and wintering of tender plants, that we have come to regard certain varieties as indispensable in summer bedding arrangements. The dwarf section are invaluable as edging and carpeting plants; the best kinds are *S. acre*, green; *acre elegans*, cream coloured; *corsicum* and *glaucum*, bluish grey; and *Lydiu*, deep green. The best of the tall and trailing growers are *altissimum*, *spectabile*, *Sieboldi variegatum*, and *telephoides*; these varieties look well planted in lines or clumps, and continue in flower a long time, rain or wind doing but little injury to the flowers. All the kinds are readily propagated by division, early spring being the best time for splitting up the plants.

HARDY FLOWERS.—*Achilleas*, *Columbines*, *Delphiniums*, *Potentillas*, *Spiræas*, and *Phloxes* are a few of the most conspicuous among plants now in bloom. They need an occasional tie to support them, and require to have the bad flowers removed. Annuals in the same borders also need support and to be thinned out. Sweet Peas will continue flowering the whole season if not allowed to seed, and a good way of securing a succession

of flowers is to pinch out the tops, a plan which conduces to lateral growth, on which flowers equal to those of the main stem are produced. Two sowings of Sweet Peas—January and March—are all that we ever make, and yet by this plan we always have an abundance of flowers till sharp frost cuts them down. Scarlet Runners and the Canary Creepers are amenable to exactly the same treatment, and the results are similar.

SUB-TROPICAL AND OTHER BEDDING PLANTS.—Quick growing kinds of sub-tropical plants should be looked over every week, to see that they are properly staked and tied. Peg down the undergrowth and keep the beds free from weeds; should the weather be dry, they will require abundance of water to keep them in vigorous growth. The regular removal of decayed and seeding flowers will also greatly tend to retention of vigour. The common kinds of bedding plants also require frequent looking over with the view of removing bad flowers and foliage, and regulating their growth by pegging down and pinching. Verbenas, Petunias, Calceolarias, and Pelargoniums can only be kept in presentable condition, especially during showery weather, by off-repeated picking over. Keep the lines and edgings of foliage beds in trim condition and well defined. Sedums and Saxifrages only need a little manipulation with the fingers; other plants may need clipping. Echeverias may require to have the flowers removed, and the same remark applies to tricolor Pelargoniums. Alternantheras have done badly with us, and to fill out the space *Herniaria glabra* and several kinds of Sedums are now being dibbled in between the plants, labour that will be well repaid both as regards summer and winter effect.

GENERAL WORK.—Weeds on walks and roads have this season been very troublesome. In the case of some gravels—those that do not bind down hard—hoeing may be had recourse to; in that of hard gravel hand-weeding only should be practised. For Moss-grown spots under trees, &c., a winter dressing of salt is desirable; it kills the Moss and adds brightness to the gravel. Now that they have completed their growth, shrubs and branches of trees overhanging walks should be trimmed up. Portugal and common Laurels, Yews, and Rhododendrons are some of the kinds that now need cutting back. Shrubbery weeding and hoeing constitute another important item of labour at this season, and if, as is frequently the case, time cannot be spared to go through them thoroughly, an effort should at all events be made to prevent the weeds seeding by going through them with a rip-hook.

INDOOR PLANTS.

EUPHARIS AMAZONICA.—Where there is any considerable demand for cut flowers this plant ought to be grown in quantity. By growing and resting some at different periods, where there is sufficient stock, it may be had in bloom all the year. Examples that flowered early, and since then have made sufficient growth, ought to be put to rest, and should have no water until the leaves flag slightly, when a little may be applied, but not so much as to induce the plants to begin growing again. Place them in a lower temperature for five or six weeks and give no more water than is just sufficient to prevent the leaves from being injured. They will soon bloom again when placed in heat.

ANTHURIUM SCHERZERIANUM.—Any large specimens of this brilliant-flowered Aroid in want of more root space cannot receive it at a better time than now. Its best growth is made in the winter; consequently if potted at this season, the full benefit of the new soil will be reaped. There is no necessity to give it a great depth of material, as it is a surface rooter, but plenty of drainage is of the first importance. It is not advisable to allow young examples that it is desirable to grow on without delay into large specimens to seed, their growth being much retarded thereby. Immediately the flowers commence to fade they ought to be removed, unless the intention is to raise

young stock from seeds. Though the different forms of this Anthurium do not reproduce themselves true from seed, still it is not well to raise seedlings from any but the best flowered sorts. The seeds are not fully matured for eight or nine months from the time when the flowers first open; wash them out of the pulpy mass that encloses them before sowing. They succeed best in very open, porous material; fine chopped Sphagnum, to which has been added sand in the proportion of one-fourth its bulk, will be found to answer well. Take a good-sized ordinary seed-pan; half fill it with drainage, over which lay as much of the Sphagnum and sand mixture as will come up to the level of the rim; press this firmly down, and give a good watering to settle the surface, again pressing it quite smooth to keep the seeds from getting washed down by subsequent waterings, for any that get below the surface do not come up freely. Scatter them on the material, and put the pan in a house that is kept about 60° by night; shade from direct sunshine, and keep them damp. The young seedlings will begin to show themselves in a few weeks, and should then have more light, but they should not be exposed to the full sun. They ought to be pricked off when large enough to handle into pans drained similarly to those in which the seeds were sown, adding to the Sphagnum and sand one-half chopped fibrous peat. Let them be kept on growing, and as soon as large enough put them singly in little pots, using the same sort of soil as that last described. Particular care ought to be taken of the strongest plants, for it will be found that those which take the lead will continue to be the best growers, and will also bear the finest flowers.

HARD-WOODED GREENHOUSE PLANTS.—No time should now be lost in putting outside such plants as require a few weeks' exposure, including those that fail to set bloom freely if kept indoors all the year round, and those that are liable to be attacked by mildew. *Eriostemons*, *Hedaromas*, *Correas*, *Acacias*, *Aphelexis*, *Boronias*, *Pimeleas*, *Pleromas*, *Adenandras*, *Leschenaultias*, *Mirbelias*, *Pentrandras*, *Pulteneas*, &c., should all be treated in this way. It is a good plan to put them for a few days where they will not be under the full influence of the sun, particularly in the middle of the day; in a week's time they may be placed in the full sun, taking care that the pots on the side nearest it are shaded from its direct rays. If this is not done injury will result to the roots that are in contact with the inner surface. The ground on which the plants are placed ought to have a layer of ashes spread over it, not less than 4 inches thick, to keep out worms. If we have very bright weather it will be a great assistance if the ashes are damped every evening and the plants well syringed in the afternoons, being careful that the water gets to the undersides of the leaves as well as the upper. So far the season has not been favourable to red spider; still before putting the plants out each ought to be examined to see if this troublesome insect exists on them, as it spreads very fast out-of-doors when the weather is bright and soon does a great deal of damage. Any that are found to be affected ought to be laid on their sides and syringed with weak Gishurst Compound (two ounces to the gallon of water is quite strong enough for this purpose, but the dressing to be effectual must be thorough); let it remain on for about an hour and then wash with clean water. All plants which the insect has attacked should, so long as there is enough warmth for it to live, be examined regularly, as a fresh lot may come to life, and before they are noticed do a deal of injury to the foliage. Whilst the plants are out it will be necessary to be very careful in the matter of watering, examining each at least once a day, as the drying influences of sun and wind are greater outdoors than under glass. It is neither necessary nor advisable to submit *Dracophyllum gracile*, *Acrophyllum venosum*, *Phenocoma prolifera*, *Statice*, *Witsenia corymbosa*, *Roella ciliata*, and *Gompholobium* to this open-air treatment, more particularly the *Acrophyllum*, as its leaves are not able to bear being fully exposed to the sun. Indeed, it suc-

ceeds best in a house that does not admit so much light in the summer time as most things want. The roots of the *Gompholobium* and *Dracophyllum* are so delicate, that they are better not trusted outside.

HEATHS.—The varieties that bloom in the autumn, such as *Turnbulli*, *Jacksoni*, *retorta major*, *Austiniana*, *Marnockiana*, and *Irbiana*, are extremely useful. If there is a desire to retard them either for decorative purposes or for exhibition, this may be done by placing them in a north house. They must, however, have plenty of light. Where there is no house of this description, some lights can be temporarily fixed at the north side of a wall in an open situation. Retarding can be better done now than when the flowers are further advanced, and there is also less danger of injuring the plants. Spring-blooming varieties that after flowering have made their growth may, if wanted to come in early next year, say in March or April, be set out-of-doors immediately, but if not required until May, it will be well to delay their full exposure a little while, as the sooner they are turned out the sooner they will flower.

ROCHEA FALCATA.—This is a serviceable plant in autumn; it is most useful when grown in 6-inch or 8-inch pots. Examples wanted to be in flower next year will be benefited by being exposed in the open air to the full sun for a few weeks; the growth by this means gets better matured and solidified than if kept altogether indoors. Those now pushing up their flower-stems will require plenty of air and light to prevent their being drawn up weakly. If there is not sufficient stock, leaf cuttings may now be taken off and put in sandy soil round the sides of pots. They will form roots and push out shoots, but must only have as much water as will keep the soil from getting dust dry, or they will rot; the same mishap will also occur if they are kept too close. As soon as they have begun to grow fairly move them singly into small pots, using sandy porous soil, and giving them more water.

ARDISIA CRENULATA.—Plants of this that are swelling their berries should have a light position and sufficient warmth to enable them to grow freely; they will also need syringing to keep them clean. If the pots in which they are grown are small compared with the size of the plants, it will be requisite to give them weak liquid manure every ten days or fortnight; by so doing their leaves will possess that bright dark green colour that is so desirable. However well berried they may be, if deficient in this respect they lose half their interest.

ÆSCHYNANTHUSES.—Few plants are more effective than these when grown in baskets; where autumn-blooming kinds, of which *Æ. grandiflorus* may be named, are so managed, they must be well attended to in the matter of water; if this is not done their flowers will fall off without opening. From the position they occupy basket plants are more likely to suffer in this way occasionally than those which are in the body of the house.

CLERODENDRON KEMPFERI AND C. FALLAX.—These are of more use for decorative purposes in a small state than when large. There is no better way of propagating them than by means of seed. Examples that bloomed early and were allowed to mature seeds will have ripened them by this time, which can be readily seen, as they turn quite black, and fall from the capsules on the slightest touch. Sow immediately in small pots, using sandy loam, put them in heat, and keep a little moist. Treated in this way they will not be long before they vegetate; directly that takes place let them have a position close to the glass to keep them from becoming drawn. During autumn they will need shifting into 5-inch pots; keep them growing slowly through the winter and they will form good blooming plants for next summer, *i.e.*, if they receive a shift into 9-inch or 10-inch pots about February.

FRUIT.

PINES.—Queens for early starting are not so well advanced as one could wish, but much

may still be done by keeping them well plunged in a bottom heat of 90°, by feeding with gentle stimulants at every watering, and by closing in time for the house or pit to run up to 90°, with solar heat and moisture. If nights continue cold, turn on fire heat to catch the minimum at 70°, damp down the floors and fill the evaporating pans with liquid, and give a little air very early on bright mornings to favour the escape of condensed moisture before the sun catches the points of the leaves. If the second batch of plants which generally make a growth before they start in the spring are in a separate compartment, the air temperature may range a few degrees lower, as they may be kept growing later in the autumn, but the bottom heat must be kept up until the pots are filled with roots, and the general system of feeding and early closing may be precisely the same as that recommended for the first set of plants. Give plenty of air to Pines that are ripening, and remove the plants bodily to a cooler and drier house if the fruit is wanted to keep for any length of time after it is fit for use. Rothschilds, Cayennes, and Jamaicas now throwing up or going out of flower will require a sharp bottom-heat to help them on, and plenty of stimulating liquid and guano water alternately to swell the fruit. Avoid wetting the pips when they are in flower, but when this stage is over syringe lightly overhead and well into the axils of the leaves at closing time, and economise fuel by running up to 90° or 95° for a short time with solar heat alone. Avoid the too common practice of crowding the plants in succession pits. Keep them near the glass to insure a firm, stocky growth. Give diluted liquid or weak guano water at every watering, and close about 4 p.m. with sun-heat and plenty of atmospheric moisture. Pot up suckers as they are taken off fruiting plants, plunge in a sharp bottom-heat from fermenting materials in a pit or frame, and water sparingly until they begin to make roots.

HARDY FRUITS.—Stop all strong growths on Peaches and Nectarines, and keep the shoots neatly trained to let in sun and air. The heavy rains which we had last month having thoroughly soaked the borders, the trees are healthy, vigorous, and free from insects, and promise to ripen up a crop of fine fruit; but owing to the lateness of the season, Walburton Late Admirable, Barrington, and other late kinds will need timely attention to every point in the detailed management to get the fruit forward and the wood perfectly ripened before bad weather sets in. To this end early afternoon syringing with water at a temperature of 80° will do good service, and an occasional surface watering with tepid water will tell upon the size and quality of the fruit. Complete the thinning of Pears and stop all lateral growths, as every ray of sun and light will be needed by the fruit, and even then many of the choice kinds will be found deficient in flavour. Cut away the old canes as soon as Raspberries have done bearing, and thin out all the weakest shoots of the current year to let in light and air. Tie up those left to prevent them from being injured by the wind, and keep the beds free from weeds. Trim off all damaged leaves, also the runners when the Strawberry crop is over. Mulch with rotten manure or good rich loam, and give the beds a thorough soaking with the hose. See former directions with regard to the formation of new beds, and get the plants in without delay. If ground intended for new plantations is still occupied by other crops, turn the newly-rooted runners out of the pots into nursery beds where they can be regularly watered, and defer planting until spring. At the present time we are gathering very good Eltons from plants treated in this way, and although growing on a north border the fruit is superior to that produced by older plants which have made too much foliage.

VINES.—Early houses in which the wood is getting ripe may now have free ventilation by night and by day, and more mulching may be spread over the inside borders to keep the roots moist and actively working in the surface dressing. Syringe well every evening to preserve the foliage as long as possible, and while gradually

shortening back all strong laterals to strengthen and plump up the fruit-bearing buds, allow weaker growths to have full play until the main leaves begin to ripen. If any of the Grapes have not finished well, the roots should be lifted and relaid in fresh soil, or a portion of the old compost may be taken away and replaced with rich loam before this month is out. The mode of procedure having so often been described in these columns, it is only necessary to advise dispatch in the performance of the operation.

MID-SEASON HOUSES.—With every prospect of a change to brighter and better weather, it may be well to remark that black Grapes now ripe will keep best where the foliage is dense, but, lacking this, some light shading may be thrown over the roof until the fruit is cut. On the other hand, white varieties colour and keep well, and Muscats lay on the finest amber where sun heat and light can play freely through the foliage on and around the bunches. Should our hopes of brighter days be realised, fire heat will only be needed to prevent moisture from condensing on the berries, and to admit of a free circulation of dry, warm air through the night. Keep the foliage clean by putting in a syringe of clean, soft water whenever it can be applied without damaging the Grapes. Damp the floors well on fine days, and see that the inside roots are kept in a moist, healthy state by the application of warm water whenever needful. Muscats and late Grapes now colouring will stand a high day temperature with plenty of air and sufficient moisture to keep the foliage fresh and healthy. If the main foliage in the Muscat house is clean and good, the laterals may be well shortened back to let sun-heat and light into the wood and fruit; but Lady Downes and other black kinds will colour best under a thick canopy of foliage, provided the primary leaves are not crowded or injured by an unreasonable quantity of lateral growth. When colouring becomes general another heavy watering with warm liquid will greatly benefit the Vines by producing conditions unfavourable to spider, while its stimulating effects will produce a depth of colour and bloom which the fruit on half-starved Vines never attains.

POT VINES intended for forcing, and now getting hard and brown, may receive the treatment recommended for early houses from which the fruit has been cut. Remove the laterals from the base of the Vine upwards to the pruning bud; carefully preserve all the old leaves by daily syringing and the application of as much pure water as will keep the roots fresh, and avoid the too common practice of turning the Vines out-of-doors to be battered by rough winds and prematurely ripened by checks and chills. Spring-struck Vines intended for cutting back or planting may be placed out-of-doors to ripen in preference to keeping them too much crowded under glass. The best situation is a south or west wall, as they can then be secured with shreds and nails, and some kind of non-conducting material placed about the pots will economise watering and keep the roots in a healthy state.

CHERRIES.—Let early forced trees have full exposure to the elements by the removal of the roof-lights to the paint room where they can be properly overhauled and painted, if needful, before they are again wanted to ward off heavy autumnal rains. See that spider is kept off the foliage by occasional washings with the engine, and dip the points of the shoots in Tobacco water to free them from black fly. Look well to internal borders, and, while guarding against forcing a second growth by giving too much water, see that the roots do not suffer from drought. If the lights cannot be taken off, ventilate to the fullest extent, mulch inside borders to keep the surface roots cool, and give a moderate watering occasionally. Attend to pot trees now in the open air, and syringe well after bright days. Mulch the tops of the pots with rotten manure; cover up the sides with Fern or litter, and give just enough water to keep the roots progressing in the new compost.

PLUMS.—Remove early kinds to the open air as the fruit is gathered, and treat as Cherries,

always bearing in mind that cleanliness from this time until the leaves fall must be insisted upon if the trees are to start fresh and free from insects in the spring. Give later kinds more room in the house, and continue the syringing with pure soft water until the fruit begins to change for ripening. It is hardly necessary for us to say an easily excited tree like the Plum cannot have too much air at this season, and that pots now full of hungry roots cannot have too much water. Late kinds may be set out-of-doors for a time, but under good management this is not necessary.

KITCHEN GARDEN.

Now is a good time to sow spring Cabbages, winter Lettuces—that is, Lettuces for cutting through the winter—and Tripoli Onions, and as soon as you see the young seedlings appear protect with netting, or the wind will ruin the crop. To make Cabbage crops pay, the plants should have plenty of room, and when planted after Onions without any digging they should be strong and of one size. General work will consist in hoeing, cultivating, and cleaning among all growing crops. Have a good breadth of Parsley for the winter supply. Cut all herbs that are in flower, spreading them out to dry, but not bunching them green, which spoils their flavour. Plant out the latest batch of Celery, and earth up the early rows now growing vigorously. Begin now to get the manure together for the October Mushrooms, water it with manure water, and sprinkle with it a little salt.

FRUIT GARDEN.

ORCHARD MANAGEMENT.

AN American writer in *THE GARDEN* (p. 83) bewails the condition of our orchards. He says their treatment is bad; nothing could well be worse. Now, from some considerable experience I feel constrained to say that not one in a hundred practical fruit growers would think of adopting any of the remedies which he proposes. His main reliance as regards improvement consists in frequently clipping the Grass with a lawn-mower and leaving it to fertilise the soil. As to removing the early crop of Grass for hay in June, whether it is done with the June Grass (*Poa pratensis*) or any other Grass matters not. Every grower of experience is agreed that one cannot grow hay crops and good fruit together, for hay is more exhaustive to the soil than growing vegetables or even cereals between the trees, as you must of necessity manure for these crops, and the trees get their share of it; in fact, until the trees get well established, cultivating and light cropping is probably the best course to pursue, but as soon as the trees are ten or twelve years old there can be no question that it is best to lay the soil down in permanent pasture, and keep the Grass fed off closely by sheep or calves. Never introduce a scythe or mowing-machine into the orchard if you wish for fruit, but make the orchard the winter as well as summer quarters of farm stock and poultry. Such a course will help the fruit crop, for, as your correspondent says, it is a question of manuring and under-draining, and, I would remark, very much more a question of the former than the latter, for, except where stagnant water prevails, under-draining does more harm than good. Your correspondent gives 40 feet apart as the minimum distance for orchard trees. Well, they will fill that space in time, but it is wasteful to plant them so wide. Better far plant at 20 feet apart, and when the trees require the space take out every other one; but that necessity need never arise, for by planting large strong-growing kinds in alternate rows with those of less robust growth both will get plenty of space and do better than if set out at such extreme distances apart. There cannot be a doubt that young trees help one another in the matter of shelter, and therefore it is quite possible to plant too wide apart. That there is plenty of room for improvement in our orchard

management I readily admit, but I fear your correspondent has not seen the best examples, such, for instance, as the large fruit farms of Messrs Skinner and others in the neighbourhood of Maidstone, where, I feel sure, he might get considerably enlightened as to our system of management.

Gosport.

J. GROOM.

PROTECTION, OR NO PROTECTION.

AGREE with "J. S. W." as regards this matter, that is if I have read Mr. Baines' remarks aright. What does Mr. Baines' argument amount to? Is it not that the management of wall trees on the most approved system will have a decided tendency to enable such trees to withstand spring frost—indeed, that without protection they shall show a better crop after 10° of frost than trees not so well cared for, so far as cultural excellence is concerned, but which have received artificial protection until all danger of frost is over? The argument seems to be based on the assumption that given thinly placed, well-ripened wood and large, well-developed blossom, the trees have a better chance if frost comes when they are in bloom than they otherwise would have. But what does this avail when fruits larger than marbles are frozen through and reduced to a pulp? My own idea of the matter is that, given such frosts as we have experienced this spring, and we shall require ample protection for all kinds of fruit, and the question of Peaches coming safely through the ordeal and Gooseberries freezing, or *vice versa*, is practically out of the question in a season when nearly all wall fruit (unprotected) is swept away. Is there not some special natural shelter in the case of the Peach wall cited by Mr. Baines? It is a unique and certainly a gratifying experience to find Peach blossom standing 14° of frost, and I for one must decline to believe that any special culture can effect such a result, however good the condition of the trees may be. Many cases have come under my notice of wall trees of every kind being reclaimed after remaining for years in a neglected state, and of their bearing cleaner and finer fruit than before renovation, but I never knew an instance in which the frost-resisting power of the trees was strengthened thereby. It certainly seems expedient, after our experience this season, to anticipate danger, and ventilate thoroughly during the coming months the question of the best, cheapest, and most convenient form of protection for every kind of wall fruit. I fancy all who have suffered will co-operate in this matter, and if so, out of evil good, perhaps, may come, and the disaster of 1884 exceed in magnitude anything that shall visit our trees in the future. In the meantime there is nothing to prevent Mr. Baines from giving us a few hints on an improved system of pruning, training, and general management of wall fruit that shall prevent Apricots, Peaches, Pears (and also Gooseberries amongst bush fruit) from being reduced in a single night to little else than a jelly.

E. B. C.

FORMS OF FRUIT TREES.

WE have a fine specimen of the Crab in the grounds here that I have carefully noticed annually for the last twenty years, and I have been much struck with its constant production of an abundant blossom, as well as its beauty at that season. The tree occupies an open situation, and has never been meddled with by the knife in any way; consequently, it has assumed an almost perfectly even and round form in the top—a shape which all the Apples assume sooner or later if not interfered with too much. About fifteen years ago we planted a number of Apple trees in a similar position to that occupied by the Crab, and, except cutting the leading shoot off once or twice, they have not been interfered with, and they have now assumed nearly the same shape as the Crab tree, and are equally floriferous and fertile—always presenting an even sheet of flower over the whole of their outer surface. The natural habit of the Apple is to produce one stem or trunk spreading out into a symmetrical and proportionate head, and any interference with that habit

always results in an awkward-shaped tree unless constant cutting and training are resorted to to keep it in shape. We had at one time many low-spreading Apple trees in the kitchen garden here, which were removed to an orchard and allowed to grow pretty much as they liked; the result was that the numerous side limbs extended into long top-heavy branches that have had at times to be cut back to keep them erect, and these trees have never looked so well as the standards. Cultivators of low bush-shaped trees on the natural stock, such as are convenient to grow round the margins of kitchen garden plots, always train them with an open basin-shaped centre, which is the exact reverse of the shape assumed by the tree naturally, and which is by far the best, as can easily be shown. The round umbrella-shaped natural head produces all its fruit, spurs, and crops on an outer surface, all of which is constantly exposed to the sun and air, the leaves and branches acting as a protection and support beneath; whereas in the basin-shaped tree only one portion of the branches receives the sun at a time, and that for a short period only. This makes a considerable difference in the quality and time of ripening of the fruit, that on the shaded branches being latest and greenest, while that on the sunny side is well coloured and large. The umbrella-shaped top, on the other hand, receives the force of the sun's rays more or less over the whole of its surface all the day through. These are things which anyone may see for himself about this season; he will notice that the tree with the short trunk and open cup-shaped centre is really a tree turned wrong side out. It is a remarkable fact that almost the whole of our trained trees are constructed on a principle the reverse of what Nature teaches.

J. S. W.

Gooseberry caterpillar.—For getting rid of this caterpillar we have used successfully the following mixture for these last six years; of course the cure is not complete the first season. When the leaves are just expanding we mix well three parts of quicklime to one part of guano, and apply on the forks of the bush, about a tea-cupful of the mixture, which falls into the rough bark and on to the ground. This should be done on a dry, quiet morning. The same applied to Rose trees prevents the brown grub from attacking the flower buds.—FRANCES VIGERS, *The Mole House, Hersham*.

Remedy for cracked Pears.—If anyone has a Pear tree that bears spotted or cracked fruit, says the *New York Tribune*, let him sprinkle wood ashes freely over the soil beneath the tree, as far in diameter as the branches extend—not a light sprinkle, but a liberal dressing. Then wash the bark thoroughly with strong soap-suds (old-fashioned soft soap preferred), with the addition of lime-water and a little flowers of sulphur. I had a white Doyenné Pear tree treated in this way that previously bore only imperfect fruit, but which after treatment gave some delicious highly-coloured specimens. It may not cure in every case, but it will do no harm.

Inside Vine borders.—Mr. Baines has devoted a column to my question relating to the Lambton Vine borders, but without answering it. Let me therefore just state the case and leave it to the reader to judge. Mr. Baines furnished a case of Vines planted between an inside and an outside border. The inside roots had been annually lifted at their extremities and given fresh soil, and finally had to be lifted altogether at the end of fourteen years and have an entire new border put to them—the outside roots in the meanwhile carrying the Vines and crops through all their vicissitudes and receiving no unusual attention during the whole of the time. These are Mr. Baines' facts as furnished by himself, and if they do not deal a fatal blow to his theories about Vine roots preferring inside to outside borders, I am sure I cannot conceive of any kind of evidence more likely to do so.—J. S. W.

Supposed collection of Strawberries by a hedgehog.—An acquaintance informs me that

a few days since his terrier found a hedgehog in his garden. Knowing the value of these little animals, he let it remain there. Within a day or two he found several small heaps of Strawberries collected near the beds, the heaps appearing as if a plate of the fruit had been carefully emptied on the ground. Having utterly failed to discover the cause of these collections, he made the terrier hunt the place, with the result of quickly finding the hedgehog, at whose door this fruit-collecting and presumable fruit-eating is laid. Is there any authority for such a supposition?—XEL, *Callan, Co. Kilkenny*. [We should say not. In all probability the little heaps were made by human agency, to facilitate wholesale removal at a convenient opportunity. We should have examined the fruit for indications of the way in which it was picked and carried.—ED., *Field*.]

Fruit trees in pots.—The cases which Mr. Douglas relates of successful orchard house culture, viz., those of himself and Mr. Rivers, are not sufficient. If two such cultivators had failed, I wonder where else success might be looked for. Both of them have an interest in putting the very best face possible on the matter, but the question is, what has been the success of cultivators generally, and especially of those numerous amateurs for whom the system was mainly devised. I made an exception in the case of clever professional gardeners like Mr. Douglas; has he no other examples to show? and are the calendrical instructions on the orchard house, written by him, from week to week, a true representation of the labours and necessities of the system? If they are, no other is needed, for these instructions show that the duties of the orchard house are such as cannot be carried out successfully, except by those who employ regular gardeners, and that the same ends could be better secured by planting out in the usual way.—S. W.

Black Prince Strawberry.—Except for the fact that it furnishes a few very early fruit, I do not consider this Strawberry worth growing. It certainly cannot be compared with La Grosse Sucrée, and I find but little difference in the earliness of the two, and La Grosse Sucrée is by far the better fruit. It is also at the very top of the tree as regards forcing. Our three best Strawberries are undoubtedly La Grosse Sucrée, Sir Joseph Paxton, and Dr. Hogg, but, as in the case of every other fruit, no hard and fast rule can be followed in the selection of varieties for different soils and localities. I have an idea, however, that Black Prince will succeed in a much lighter soil than is acceptable to most Strawberries; indeed, the best fruits of this particular variety I ever remember to have seen were from a light south border. Where it has a damp bottom there always seems a tendency to mildew. It is difficult to get the old Elton Pine true now; a lot of plants from a nursery that came under my notice the other day seemed very much mixed. This is a prodigious cropper, and perhaps the most valuable of all for preserving and for other culinary purposes.—E. B.

Apple culture.—"J. S. W." (p. 76) gives advice on this subject, some of which is practical, and some not; for instance, who would have the ground paved with York stone or slates? Such an undertaking would damp the ardour of most cultivators. "J. S. W." appears to see no obstacle in the way of paving an orchard 2 feet beneath the soil, but a good deal of trouble in judicious pruning both roots and branches. My advice is to plant Apples so that they will pay, and cottagers should be given trees of good varieties with which to pay their rents. A cottager, a near neighbour of mine, rents an allotment on which there are four Apple trees. On two successive years I purchased the crop on two of those trees, and for which I paid within a few shillings his annual rent. I gathered the Apples myself, he having the remaining Apples, Potatoes, and good breadths of other useful vegetables. But Apples to have their own way rambling over paving stones under ground and waving their unpruned branches in the wind to be spoiled and torn by gales and storms will not

pay. I say trench the ground by all means, and where the atmosphere is not poisoned by smoke and dust, and the Oak, Elm, and Ash will grow, plant Apples, and if they grow vigorously prune them judiciously. If you do not know how to do so, go to the nearest practical gardener, and ask him to show you. My employer contemplates planting an orchard of Apples in a very prominent position for the beauty of the blossom and the fruit of the Apple. The running wild or non-pruning system will not pay. We must never forget that the grand old gardener was put into a garden "to dress it and to keep it."—R. M. T.

5232.—**Melon roots.**—The decay in the Melon roots is the result of the manure dressing. I never give my Melons any manure from the time they are planted till they are cut. I have a house in which the fruit will soon be ripening. I set the plants in good loam, and they are everything one could desire, both as regards health and weight of fruit.—R. L.

—Allow me to inform "R. D." that he made three mistakes, any one of which would account for his failure. In using road scrapings as a compost, the wonder is that the plants grew at all, as sand in any form is injurious to Melons. The compost which I use myself (and I have grown Melons for a number of years, and usually cut ripe fruit in May) is fresh, heavy loam, about a fourth of leaf-mould, and a sprinkle of crushed bones, the whole well rammed. Your correspondent mulched his plants, and the result was a rank, luxuriant growth, a thing not at all to be desired. It is to prevent a luxuriant growth that Melon seed is often kept till the third or fourth year before it is sown. The mulching should not have been applied till the fruit had attained the size of hen's eggs. I prefer giving stimulants in a liquid form, simply because they can be discontinued at the proper time; whereas if mulching has been adopted, the roots continue to permeate it, to the detriment of the flavour of the fruit. "R. D." thinks watering was overdone, and no doubt it was. I never water a Melon plant till the leaves begin to flag, and then not to saturation. The plants should have been syringed only on bright afternoons at closing time. An occasional syringing with diluted Tobacco water would keep down insects. As a matter of course, the roots were the first part of the plants to decay.—CHARLES E. MAGILL, *Dalguise, Monkstown, Co. Dublin.*

ROTTEN FRUIT.

It is sad to see how much of this is sold in London. When fruit is forbidden, as it frequently is in cholera times, it is no doubt rotten fruit that is meant and that is harmful. In the central row, Covent Garden, we saw a number of boxes of Tomatoes exposed in a decomposed state, though the skin was whole. The Tomato is peculiar in not showing decay so easily as other fruits and vegetables, and great quantities of it are sold and eaten in a bad state. Coming to other and dessert fruits, anyone who notices them in our great markets may see unpleasant sights. Now and then the dealer himself promptly estimates the value of some of his stock, and throws his Cherries down in the street, where they add to the now popular attractions of Covent Garden. It is to be wished others would do so too; but, alas! in the very central row of our great fruit market it is common to see outside the good shops fruit offered in a state of decay. In Fenchurch Street the other day we saw Peaches marked 1s. 6d. each, which on examination proved to be nearly "half gone" with the mouldy decay common to the Peach. That a dealer in such a street should charge at the rate of 18s. per dozen for rotten Peaches is an exceptional case; but why should fruit dealers be allowed to sell at any price garbage that may be dangerous to health? And if this be done, as we know it is, outside of good shops (at a low and tempting price, it is true), what may we not expect in some of the poorer districts? Well, our experience is that, either for extortionate charges or such things as we point out above, the practices in Covent Garden are much worse than

at suburban or district shops. The antiquity and fame of this central institution are such that the less scrupulous tradesmen in it take greater liberties in all ways than anyone with a local business to support could venture to do. Happily, all the dealers there are not of the class we allude to; indeed, some of them have the best houses in the trade. Still, in this matter of offering outside their shops fruit in an unfit state even good houses err; that they do so without fear or hesitation shows what may be done elsewhere. The inspection of fruit is far from being as thorough as it should be, if inspection there be at all. Certainly decayed fruit does not call eloquent attention to itself, as fish and meat in a bad condition do; but nevertheless it is dangerous food, the sale of which should be forbidden and effectively controlled in times when plagues are in the air, if not at all times. In any case, those who enjoy Tomatoes with their chops in London restaurants would do well to glance at the Tomatoes, whatever they may do with the chop. This is a fruit (or vegetable, as some may prefer to call it) which can never bear long carriage, but which is brought in quantities from Spain, Portugal, and other districts in South Europe to our markets. It is abundantly sold in a bad state, the glossy skin concealing the fact from most observers, especially the many who pay no attention to what they eat. If the numerous glass houses, pits, and frames that in our country are empty, or nearly so, during the summer months were used, as they might be, for the growth of Tomatoes, there would be less need to bring from distant countries a wholesome esculent now steadily growing in favour.—*Field.*

RECENT PLANT PORTRAITS.

SCUTELLARIA LEHMANNI, CALIMERIS ALBERTI (Regel's *Gartenflora*, plate 1152).—The first-named of the above is a herbaceous plant bearing small bunches of short, tubular, deep rose-coloured flowers, somewhat resembling those of *Salvia porphyrantha*. The second is a graceful growing slender-stemmed plant, bearing at the end of each branchlet a single pale lilac composite flower not unlike that of *Lactuca perennis*.

YUCCA WHIPLEI VIOLACEA (*Revue Horticole* for July 16).—A variety of the comparatively well-known *Y. Whitlei*, with the lower half of the petals stained on the outside with a deep violet colour, the upper half being white as usual. This curious and distinct variety bloomed for the first time last summer in the Botanic Garden at Hyères, in the south of France. The flowers are said to exhale a strong odour resembling that of the common white Lily, but less sweet.

LÆLIA ELEGANS ALBA (*Illustration Horticole*, plate 526).—A fine double plate of this beautiful Orchid, the tube and five petals of which are of the purest white and the lip clear deep rose colour, forming a charming contrast.

APHELANDRA ATROVIRENS (*Illustration Horticole*, plate 527).—A variety of this well-known family of stove shrubs introduced by the Compagnie Continentale of Ghent from Bahia, with pointed leaves of the darkest shade of olive-green and spikes of small yellow flowers. It is said to be of a dwarf and compact habit of growth.

BESCHORNERIA DECASTERIANA (*Botanical Magazine*, plate 6768).—A double plate of this tall-growing green-flowered Amaryllid, which flowered in the Cactus house at the Royal Gardens, Kew, in the early summer of this year. The plant was received from Herr Max Leitchlin, of Baden-Baden, several years ago.

RHODODENDRON MULTICOLOR (*Botanical Magazine*, plate 6769).—Two very distinct and pretty small-flowered forms of this well-known family, the one with deep rose-coloured, the other with primrose-yellow flowers. Introduced by Messrs. Veitch from Sumatra, through their collector, Mr. Curtis, and requiring the temperature of a cool stove.

BERBERIS CONGESTIFOLIA VAR. **HAKEOIDES** (*Botanical Magazine*, plate 6770).—This is a very striking plant, and quite unlike any Barberry

hitherto cultivated. It forms a large bush, with decurved branches loaded with globose masses of flowers, some of which are sessile in the axils of the leaves, and more form consecutive heads sessile on the long leafless terminations of the branches, which give the shrub a very singular appearance. It is a native of Chili, whence it was sent in 1861 to Messrs. Veitch by their collector, the late Richard Pearce, and blooms annually in the spring in their Coombe Wood Nursery.

ODONTOGLOSSUM EDWARDI (*Botanical Magazine*, plate 6771).—This handsome Orchid is a native of Ecuador, where it was discovered by Edward Klaboch, after whom it has been named. Its flowers are deep purple, of medium size, and produced on the lateral branches of a tall central spike or flower-stem. The specimen here figured flowered at Kew in April of the present year.

SALVIA DISCOLOR (*Botanical Magazine*, plate 6772).—This remarkable plant is a native of Peru, and has excited a good deal of interest from its strikingly bold and handsome port and the deep, almost black, hue of its flowers. It was first exhibited by Mr. Cannell under the name of *Salvia nigricans*, and is also known under the name of *S. mexicana* var. *minor*. The specimen here figured came from the Cambridge University Botanic Garden from Mr. R. Irwin Lynch.

HYPOCYRTA BREVICALYX (*Revue de l'Horticulture Belge* for August).—A curious gesneriaceae plant, already figured in Van Houtte's "Flore des Serres" under the name of *Pearcea hypocyrtiflora* in the 17th volume, plate 1762, of that work. It has handsome rounded foliage, distinctly ribbed with white, and singular orange globular flowers resembling a Pear in shape. W. E. G.

Cotton Lavender for edging bouquets.

—Anything that proves useful for cutting and that is perfectly hardy and accessible every day in the year deserves notice; such is the Cotton Lavender (*Santolina incana*). This must not be confounded with the rather rare Sea Cotton (*Diotis maritima*) that possesses none of its merits. I recently observed a lady making a bouquet exclusively of hardy flowers. For the customary *Adiantum cuneatum* or *A. gracillimum* she substituted this, and as it contrasts well with almost any colour except pure white—which she kept towards the centre—and holds fresh for fully a month if necessary, its merits certainly deserve recognition among hardy flowers for this purpose.—W. J. MURPHY.

LATE NOTES.

Grub (J. O. F.).—Send specimens of it, and then we may be able to tell you something about it.

Exhibiting plants.—All the plants you name may be shown as greenhouse plants, except the *Achimenes*, which some might consider stove plants.

Climbers (S. F.).—Try *Lonicera sempervirens* minor, *Clematis indivisa*, *Rhodochiton volubile*, *Tacsonia Van Volxemi*, *Bougainvillea glabra*, *Bignonia speciosa*, and *B. capreolata*.

Certificating plants at South Kensington.—Will you allow me to inform the writer of the note in THE GARDEN (p. 59) that since the floral committee was divided it has become two small committees; that the Primrose and the Orchid were judged at different tables. The Orchid I did not see. The Primrose, though a small plant, had one head of bloom and another in bud; the colour was very pretty and distinct, and the plant was new to the experts on the committee, who thought it a valuable addition to its class, and therefore voted it a first-class certificate.—A MEMBER OF THE COMMITTEE.

Names of plants.—*H. D. E.*—1, *Dendrobium Draconis*; 2, *D. Pierardi*.—*Mac.*—We cannot name sorts of *Viola*, as we have no means of comparison.—*L. T. D.*—*Zenobia speciosa pulverulenta*—*J. L. E.*, *Tintern*.—1, species of *Helianthus*; 2, *Helianthus decapetalus*; 3, *Rudbeckia laciniata*; 4, *Scabiosa*-like plant is not *caucasica*, but *Cephalaria procera*; pink flower, *Spiraea callosa*.—*E. M. E.*—We cannot name varieties of *Carnation*; this can only be done accurately by specialists.—*W. Nelson*.—1, *Begonia Evansiana*; send flowers as well as foliage of the others.—*E. F. C.*—1, *Campanula glomerata* (Clustered Bellflower); 2, *Campanula Trachelium*; 3, *Echium vulgare* (Viper's Bugloss).—*J. Bowley*.—*Echinops ruthenicus*.—*H. R.*—Appears to be *Rose Celeste*.—*J. W. K.*—1, *Lysimachia ciliata*; 2, *Lastrea thelypteris*; 3, *Epilobium longipes*.—*G. Nisbet*.—*Faucaea ramosa*.—*C. D.*—*Bouvardia leiantha*.—*W. T.*—*Abutilon vexillarium*.

No. 665. SATURDAY, Aug. 16, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE." *Shakespeare.*

HORTICULTURAL CONFERENCES.

I SEE it is proposed to hold another "conference" at Chiswick, and the question which naturally occurs to one is why call another conference on any horticultural subject before the labours of the last one have been brought to a close and its results communicated to the public. The Apple show last year went off pretty successfully, and the reports of it published in the horticultural papers were interesting, but of the results of the conference on the subject not a word has been heard, and according to a contemporary, which affects a kind of side interest in such things without incurring any kind of responsibility, there is exceedingly little prospect of the report of the Apple Congress ever seeing the light of day. Is it true that the laborious investigations and observations of the experts on that occasion were of such a nature that they cannot be reduced to any practical or useful shape fit to pass muster? and if that be so, why, in the name of all that is reasonable, are the same parties going to saddle themselves with another congress about something else? Conferences are not things that should come too often, and unless they accomplish something, there is no need for them at all. If a show of some special fruit is desirable and likely to pay, have it by all means, but call it a "show," and not a "congress" or a "conference," when it is neither the one nor the other. The Royal Horticultural Society has always been a most pretentious body, giving itself big airs and all that sort of thing, but we all know how little it has done during the last twenty or twenty-five years. To make another conference successful, says your contemporary, "some different policy must be adopted than that which so far has prevented the publication of any official report of the results of that unprecedented meeting." What or who was it, many would like to know, that prevented the results of the congress being published? After all the anticipations indulged in by the promoters of the Apple Congress, not to mention their promises to those who assisted them by their contributions and otherwise and to the public, and the success of the show financially, the society should keep good faith by furnishing the promised result of its labours before soliciting further favours and interest on behalf of another probably fruitless venture of the same kind.

J. S. W.

AUTUMN SOWN ANNUALS.

To judge by the rarity of the practice, it appears that the importance of autumn sowing in the case of many hardy annuals is not generally appreciated, but it is an undoubted fact that these plants sown in autumn acquire a vigour never equalled by the same seed sown in spring. Those of us who are accustomed to have a hedge of Sweet Peas in full bloom in the first week in June, with grand heads of flower, commonly four flowers on a stalk, and the stalks stout and 15 inches long with a corresponding vigour of foliage, consider with reason that others who only sow in spring and get

a puny growth of some 5 feet with comparatively small short-stalked flowers some time in July, do not know what a fine plant the Sweet Pea really is, and the same with many other annual plants.

Though many of the kinds offered in seed lists are scarcely ornamental, even when well grown, numbers of others among those that really have merit are not given a chance of showing what they might be, because the common practice is to sow in spring, and a puny, half-developed growth is the result, and so the plant undeservedly gets the character of "weedy rubbish." After all, autumn sowing is only profiting by a natural example. Seeds ripen in late summer and early autumn and fall on the ground, when the first suitable weather starts them into life. Our habit (in a southern county in warm soil) is to sow most hardy annuals between the middle and end of August, the exact time, of course, being determined by the weather and state of the ground; Sweet Peas we sow in the third week in September. We like to get them such a size as to stand through the winter 4 inches high, and they are partly protected by being sown in a shallow trench. Other annuals may be sown either where they are to bloom or in open seed beds and transplanted in any winter month in mild weather—even French and Opium Poppies may be transplanted in winter. As the season for sowing is now at hand, it may be useful to offer a list of choice hardy annuals that can be confidently recommended for autumn sowing, and especially I would commend them to the notice of those who love beautiful flowers, but who "never grow annuals because they are such rubbish":—

<i>Omphalodes linfoia</i>	<i>Oxyura chrysanthemoides</i>
<i>Schizanthus Grahami</i>	<i>Eschscholtzia californica</i>
<i>retusus albus</i>	<i>tenuifolia</i>
<i>Silene pendula compacta</i>	<i>Godetia Lady Satin Rose</i>
<i>Nemophila insignis</i>	<i>Duchess of Albany</i>
<i>Leptosiphon roseus</i>	<i>Hymenoxis californica</i>
<i>Linnaria, purple</i>	<i>Papaver somniferum</i>
<i>Dianthus Heddwigi</i>	<i>umbrosus</i>
<i>Platystemon californicus</i>	<i>Poppies, French</i>
<i>Erysimum arkansanum</i>	<i>Sweet Peas</i>

West Surrey.

G. J.

FERNS FOR BASKETS.

IN the ferneries at Kew a large number of Ferns are grown in wire baskets suspended from the roof, and the majority of them are not only seen to much better advantage in that way than in any other, but are apparently much happier thus treated than when grown in pots. By growing the drooping species of Ferns in suspended baskets, a large area of unused space may be turned to good account, and where stage room is limited this is a consideration not to be lost sight of. The baskets in use at Kew are made of stout galvanised wire, and are half globe-shaped with three wires as arms by which to suspend them. They vary in size from 6 inches to 2 feet in diameter, the depth decreasing as the basket widens, so that a 2-foot basket is only 1 foot deep, whilst those of 6 inches in width are the same in depth. A lining of thin slices of fibry peat is placed all round on the inside of the basket, which is then filled up with a compost according to the requirements of the plant it is meant to contain. Two kinds of Ferns, or a Fern and a Selaginella, are planted in each basket, the one to occupy the upper portion, the other to cover the peat and sides of the basket. If the house in which these baskets are suspended is not kept very moist, it will be found safest to take down each basket once a day and dip the whole into water. A stout rod with a hook on the end

like a butcher's hook-stick is a useful tool for taking down these baskets. A little attention is necessary at first to the training of the growths which are to cover the sides; after which the growths may be allowed to take their own way. The following are some of the most striking of the Fern baskets in the Kew collection: *Davallia pallida* (syn., *Mooreana*) for the central plant, with *Selaginella flexuosa* for the sides. These two graceful plants combine with the most charming effect, the pale green of the *Davallia* and the arching character of its spreading fronds going well with the long slender growths of the *Selaginella*, the leaves of which are dark shining green and the stems purplish coloured. *Asplenium Bellangeri* and *Selaginella uncinata*, the first a well-known Fern of great beauty, and its companion, the "blue" *Selaginella*, whose metallic tint and creeping, fast-growing habit render it especially useful for covering baskets, &c. Either the common *Selaginella* or one of the above-mentioned is used for covering the baskets containing plants of the following, viz., *Adiantum farleyense*, a first-class basket plant, as witness the immense balls of it that form a feature in the large house at Chatsworth; *A. gracillimum*, beautiful anywhere, but very attractive when grown in a basket; *A. Moorei* (syn., *amabile*), the best of all the *Adiantums* for basket work; of this there are some beautiful specimens at Kew; *A. Wagneri* and of course *A. caudatum*, or, as it is sometimes called, *Edgeworthi*. These are a few of the *Adiantums* which are grown in baskets at Kew, but there is no reason why the majority of the plants of this genus should not be grown satisfactorily when treated as basket plants. Many of the *Aspleniums* are fitted to be employed in the same way, whilst some of them cannot well be grown in any other. *A. longissimum* belongs to these latter kinds. It is represented at Kew by a specimen with a spread of about 3 feet, and fronds measuring as much as 8 feet in length. Where room can be spared for this plant to develop properly it proves itself to be one of the noblest basket plants among Ferns. *Polypodium appendiculatum* has long feather-like fronds of a deep sea-green colour, with the veins, rachis, and sori beautifully tinged with chocolate-red. When grown in a warm house and suspended close to the glass, the colour in the fronds of this Fern is very bright and clear. *P. lachnopus*, with arching feather-like fronds, is pale green, and upon the pinnae are two rows of closely set sori, which are pale brown in colour, and have an attractive appearance. *P. chnoides* is another handsome member of this genus for cultivation in baskets. The almost hardy *Pteris scaberula* grows most luxuriantly when planted in a basket and suspended near the glass in a cool fernery, a basket of it at Kew looking like a large ball of fronds of the healthiest green. That Ferns may be grown, and grown well in baskets, is abundantly evident from what is done at Kew in this way, where, in addition to those above noted, there are numerous other kinds growing and thriving under basket treatment.

Of course it may be said that almost any plant will do well in a basket suspended close to the glass, and given the proper amount of attention, but it is the special adaptability of Ferns for this treatment, as seen in their superior appearance, that leads us to recommend this practice for general adoption, and more particularly for adoption in gardens where suitable positions on the stages for Ferns are but limited.

L.

NOTES ON GARDEN TOPICS.

Scheme for a garden exhibition.—

This idea will commend itself to lovers of gardens and gardeners; there is utility in it. Flower shows are being overdone, for although they have to some extent served a purpose, they have not conferred that practical benefit on horticulture that was expected of them. The garden exhibition is a different thing, but how long is it to last? one season would be too short. It has been suggested before that if our botanical gardens—some of them botanical only in name—would furnish annually practical examples of the best styles of gardening, even if on a small scale, which the people could see and appreciate, much good might be effected and a better taste promoted. At present such gardens but reflect the fashion prevailing at the time, and furnish but second-rate examples of that. With the means at their disposal many public gardens might do much good in this way, but whatever phase they took up it would have to be carried out on a comprehensive scale and in an intelligent manner. Look at the miserable and barbarous attempts at gardening which one sees in the suburbs of large towns, for example, and the copying of all the good, bad, or fantastic plans and styles that go on, and then imagine how much improvement might be effected if in some public garden accessible to such people they could see in what taste and good culture consisted. If a society in London was to originate something of this kind, as THE GARDEN proposes, no doubt other towns and gardens would copy, for we all know how much gardeners are given to imitation in such matters. Many a gardener has thought before now how much our Royal Horticultural Society might have done had it periodically illustrated the best styles of ornamental gardening and the best practices in cultural matters instead of frittering away its resources as it has done.

Orchid importations.—It is said the market is at present glutted with importations of Orchids, and that the haunts of the popular species grow more and more inaccessible, and the cost of importation greater, while prices fall. Consequently, collectors are being recalled, and by the end of the present year there will probably be fewer of them in the field than there has been for a long time. The collections of some firms amount now to hundreds of thousands, and it is expected that a cessation in the supply from abroad, together with the constant and great mortality among collections in private gardens, will raise prices to the maximum figure in two or three years. Those who have the best means of knowing say that many of the more tender species are only short-lived on the average in private places. Besides, notwithstanding the opinion entertained to the contrary, certain popular species, like *Dendrobium Wardianum*, for example, are growing scarce—plants fit for gathering at least—and collectors will have to wait till they grow again. Another reason of glut is the discontinuance of Orchid culture in many gardens, owing to its cost. Private collections are being constantly dispersed, and several of the most noted and extensive have lately been privately disposed of.

Market Grapes.—So the Black Hamburg Grape is doomed as a market Grape, it is said, and we daresay it is true to some extent. The same is said of the Alicante and Lady Downes, which are giving way to the Gros Colmar. One hears of great extensions in some vineyards for the culture of this Grape exclusively. A certain class of people are content to stock their cellars with inferior wines and bad champagne, and we daresay the same people will regard a Gros Colmar Grape as good as a Muscat or a Hamburg, or any other; but in private gardens, where the produce is used at home, we have as yet heard of no instance of the Gros Colmar supplanting the superior kinds. It is perfectly needless for the advocates of the Gros Colmar to recommend it for quality. It is a good grower and bearer, looks well, and sells well, but that is all that can be said in its favour.

Seedling Carnations.—For the border these bid fair to supersede named kinds and Mule Pinks, for in diversity of habit and colour they may be said to embrace both. One-year-old seedlings flower most freely, beating plants from cuttings in that respect. Our seedlings are just a mass of flower at the present time, and the flowers are of all shades—fiery scarlet, crimson, white, blush, and intermediate hues—and of all degrees of doubleness, while the broad-petalled single forms are also very pretty, and some of them of wonderful size. Like all seedlings, the plants are vigorous, and will doubtless produce great quantities of flower the second and third years. We understand there never was such a demand for border Carnations as there has been during the past year or two. Some members of the trade disposed of 50,000 plants or more in a few months in the early part of the year. This increasing popularity of the Carnation is due to the fact of gardeners and others becoming familiarised with it as a hardy plant of easy culture, and to its ceasing to be regarded as a florist's favourite, only to be coddled in pots and frames during the greater part of its existence.

Natural and formal Picotees.—Those two figures in THE GARDEN a couple of weeks back show better than any words could do how widely divergent the florists' ideas are from Nature. Both the cuts are good and accurate, and I suppose even florists in the exercise of their own good taste would prefer the right hand flower on the plate for a button-hole anywhere. The two forms have not the least resemblance to each other, and a glance at the figures and a comparison show that the florist's ideal Carnation could have no counterpart in Nature. It was his own pure invention and nothing else.

The Potato disease and present crops.

—Mr. W. G. Smith wrote in July in a contemporary that we had then "the exact meteorological conditions upon us which suit the development of the fungus." So far as this portion of the country is concerned he was right, for July throughout was cloudy, wet, and warm, and the rainfall amounted to close upon 3 inches, but for all that there is practically no disease in the tubers. The fungus is to be found here and there on the haulm. Early and second early crops are quite sound and good, and late crops look equally well. The Potato stems and leaves everywhere have an unusually healthy look, and the tissue is woody, firm, and well matured—thanks to the drought and heat in May and June, and hence, probably, the reason why the "exact conditions" of the disease present in July have not exerted any influence; at all events, the crop is a good one, let the fungologists settle it as they may.

Spiræa palmata.—This, the finest of the herbaceous Spiræas, has not flowered well this season, owing to the heat and drought. It grows anywhere well enough, but it is essentially a cool soil lover delighting in moisture at both root and top. It must not be expected to flower always well in dry, poor soils or situations, but in the gardens of the cooler north it will probably become a permanent favourite for flowering in July and August. Both it and its near neighbour, *S. venusta*, are conspicuous and pleasing objects in the herbaceous border, and the one just succeeds the other, and both last for a long while in flower.

Longevity of herbaceous plants.—It is a good plan to renew plantations of herbaceous plants, but frequent propagation entails labour and expense, and it is not necessary to propagate such subjects so often as we have seen it recommended. The great majority of hardy border plants will live for many years. We have known the same plants of the common Monkshood, Phloxes, Potentillas, Columbines, and other similar and robust species to occupy the same spot for twenty years, and look as well at the end of that period as they did at the beginning, although none of them received any manure or top-dressings during the whole of that time. Delphiniums run out in time, and are better propagated from seed or cuttings, but we have many fine plants from

5 feet to 8 feet and 9 feet high five and six year old, and which will apparently go on as long again. Evergreen subjects like the Carnation will endure for three or four years, but they are at their best the second year, making good, healthy masses, and blooming well. In my opinion it is a radical mistake to depend on annually propagated Carnations for a display. They do well enough, but produce few flower-stalks, and have to be planted thickly. They, however, produce fine grass, and plenty of it, and every shoot will bloom the year following if the plants are left undisturbed. This is the best way to have effective masses of Carnations, and there is no need to do away with them till they show signs of decay. The common practice of rooting up fine masses of Carnations one year old to make room for much smaller and younger plants not one whit better nor so good in any way is a suicidal one, and the same may be said of Pinks, but they are not meddled with so frequently. Good culture and top-dressings obviate the necessity of propagation, but most of the spreading shrubby subjects like the Candytufts are benefited by cutting in occasionally, provided the pruning is performed as soon as the plants have done flowering or early in summer; late cutting in is the death of many plants. A good top of foliage is the best protection in winter.

Supports for Melons.—It is amusing to read of the small engineering contrivances that are periodically devised to support Melons on the plants. Growers seem to outvie each other in the invention of such things. The latest invention is described as the "simplest" of its kind, and consists of "well-seasoned" timber in 8-inch lengths and a complication of wires to hold the wood in its place, the whole thing to depend on the angle of the roof and other possibilities of various kinds. The question which suggests itself is, why support Melons at all "as soon as they are set"? Do they need it? No. A Melon plant can carry every fruit it bears without assistance if they were 20 lbs. weight a-piece, and we have seen single Gourds of that weight suspended from the plants without any support. It would be as reasonable to support the branches of an Oak. When the Melon is about ripe it may be supported by a slight tie, to prevent it dropping off at the last, but before that it needs no more support than an Apple, a Peach, or a bunch of Grapes. The foot-stalk of a Melon is able alone to support the heaviest fruit that ever grew, as we have proved many times, having had hundreds from 3 lbs. to 6 lbs. weight and over that hung without support till they began to colour, and not one of them ever fell off. J. S. W.

IMPORTING LILY BULBS.

HAVING had occasion to refer to some old volumes of THE GARDEN, I came across two communications by "Dunedin" on the importation and growth generally of Lily bulbs. The practice recommended by "Dunedin" (p. 303, Oct. 5, 1878) is so exactly opposed to my own custom as well as to advice received from correspondents at home, that I venture to ask for more light on the subject. "Dunedin" says, "Collect them when the earliest flower buds are beginning to open, or even somewhat earlier." Mr. W. Bull, on the contrary, says, "I ought to advise you to be careful not to have them taken up until they are dormant, that is until their stems are quite dead." Following this advice, I last season sent a large number with perfect success, with the exception of one case, in which I massed too large a number without proper ventilation, which resulted in the loss of 400 or 500 from heating. The point, however, on which I particularly wish for information is the practical truth or otherwise of the following extract from the same letter (p. 304):—

"If the bulbs in their native habitats be not lifted till after the leaves turn yellow and the stems die down, the germ will have been liberated, and in thousands of cases will have been destroyed before they can reach this country. . . . New sorts must be formed at the expense of the sap in the cells of the new bulbs . . . causing besides much loss of time and a later

bloom, as well as the chance of not blooming at all."

If this be true, some of your readers who have received imported bulbs will doubtless be able to endorse "Dunedin's" views from experience, and I, as well as other exporters, should be thankful for hints from practical men as to a better time of lifting bulbs than that which we generally adopt. I only once sent (to Messrs. Haage & Schmidt) several years ago a box of bulbs lifted before flowering, and the consignees' remarks were: "Every bulb arrived in a rotten state; they appear to have been taken up before the plants had gone to rest," or words to that effect. It would be of great interest as well as of service to exporters generally if those to whom I sent bulbs of *L. neilgherrense*, *Wallichianum*, and *polyphyllum* last season would kindly report the percentage of bulbs that flowered (not counting small ones put in as wedges in packing) and the dates of flowering in your correspondence columns. Here *L. neilgherrense* starts in June, and flowers in August and September.

It would add to the interest of any such reports from Australasia if correspondents would add to this information as to the antipodean behaviour of bulbs imported from the northern hemisphere. Captain Cooper, of Wellington, will perhaps be kind enough to say whether bulbs sent by me have in any way altered their season of flowering to suit the change of seasons, or whether they so far cling to their old customs as to insist on pushing up their heads in July, the coldest month in the Antipodes.

F. N. GRIFFITH.

Kotagiri, Nilgiris.

FRUIT GARDEN.

SUPPOSED COLLECTION OF STRAWBERRIES BY A HEDGEHOG.

ALLOW me to say that I found several heaps of Strawberries like those described by "Xel" (p. 123) on my beds last month. The Strawberries were only half ripe and were collected by rats.—H. A. WATSON.

"Xel" (p. 123) is wrong in supposing that the hedgehog collected his Strawberries into heaps. We suffered in the same way, and discovered that field mice were the depredators. They made small heaps varying in amount from a quarter of a pound to half a pound underneath the leaves, each fruit having an inch of stem or so attached to it. They cut them off, I think, for the seed, of which they are very fond.—H. K.

The collections of fruit on the Strawberry beds (p. 123) are the depredations of voles. I have caught them at it. The berries are thus heaped for the purpose of nibbling off the seeds, the only part eaten by these vermin, and ripe and unripe fruit are taken indiscriminately. At any time during the Strawberry season I can show "Xel" numbers of such heaps.—J. M.

"Xel's" Strawberry beds (p. 123) are doubtless infested with some short-tailed field mice, for although the hedgehog gets credit for carrying the fruit into heaps, I have no doubt it was done by mice. Where Strawberry beds are near Grass land they are often visited by these troublesome pests, and when they get into large beds of ripe fruit they do not care to take any bait one can put on a trap, and to dislodge them is by no means an easy matter. The fruit is nibbled off generally with about the same length of stalk as one would gather it by hand, and beyond a little defacement on the outside there is little to denote what had done the mischief, as very little is eaten in comparison with the quantity collected together. I cannot say that hedgehogs are not guilty of the same fruit-storing propensities, but I have had frequent proof of field mice carrying Strawberries into heaps as described.—J. GROOM, Gosport.

— There is an old belief that hedgehogs are great destroyers of fruit, especially of Apples and Pears, but, judging by the experience which I have

had of them, they never touch a fruit of any kind. Hedgehogs are carnivorous, not fruit-eating, animals. I always keep them about the garden, and should a blackbird or mouse be caught or trapped and left lying on the ground overnight, not much of them will be seen in the morning. A case similar to that of your correspondent occurred here a fortnight ago, a bed of Sir Harry Strawberry being completely stripped of fruit from end to end, and the beds on each side of it partially so. The strangest circumstance, too, connected with these latter was this—one bed was of President the other of Vicomtesse Héricart de Thury, and with each of these were mixed some plants of Sir Harry; these were wholly stripped, but few of the Presidents were touched, while on the other hand the Vicomtesse fruits were cut off in almost the same proportion as those of Sir Harry. The fruits were cut clean off and laid in heaps in the beds. I thought I knew the depredator, however, and on putting down traps next morning eight field mice were caught. They had just arrived and taken possession of the beds a day or two before they were noticed.—R. STEVENS, *Paston*.

Black Prince Strawberry.—"E. B." (p. 123) cannot have seen this Strawberry in any great perfection when he speaks of its being only capable of bearing "a few very early fruit." There is no question as to its being early, but as to the few fruit, the term, according to my experience, is unjust. The fruits certainly cannot be called large, but they are of a size that is very useful, and the profusion in which they are produced compensates handsomely for any deficiency there may be as regards size. Two or three years ago I counted the fruits on a Black Prince Strawberry plant here, and although it was not twelve months old they numbered over a hundred.—J. MUIR.

ORCHIDS.

DISA GRANDIFLORA.

As this has come to the front in your columns, it may interest you to receive a blossom which was cut from the open ground. The plant has been out-of-doors since the beginning of spring. Another plant will be in bloom in about a week from now, which has satisfactorily withstood our climate in the open border for more than a year. Of course, this does not prove that *Disa grandiflora* can yet be called hardy, even in the Isle of Wight. We were let off so easily in point of frost last winter, that nothing was properly tested; but at any rate there is still room for hoping that, with the assistance of some Cocoa-nut fibre, it will pull through moderately rough weather.—H. EWBANK, *St. John's, Ryde, Isle of Wight*.

"Delta" speaks (p. 106) of two varieties of *Disa grandiflora*, one being much superior to the other. I send a bloom from a plant which I purchased at Stevens' auction rooms, and shall be glad to know if it is the "better" one. I have the Glasnevin variety also in bloom, but see no distinction in the size of flower, only in the colour, which I attributed to watering the plant from which the cut bloom was taken with weak manure water.—A. RAWSON, *Widmermere*.

My friend "Delta" states that the *Disa grandiflora* which he grows is not only entirely different from that which is grown at Glasnevin and by me, but so much superior as to make the latter "hardly worth growing." This is news indeed. "Delta" confesses that he never could get such growth, vigour, and bloom in his plants as he saw in mine and those at Glasnevin; and as he rather prided himself on his success, he accounts for the difference on the principle that "all weeds thrive apace." This reminds me that when I sent a very fine plant of *Auricula* Richard Headley to a show at Manchester, by a contrary explanation "Delta" set it down as a different and superior strain! I know and grow the variety of *Disa* which he praises so highly, and the only difference I could ever find in it here or at Glasnevin from that which he condemns is that it is very slightly deeper in

colour of the sepals, and is not nearly so vigorous and floriferous. My plants are well past their best, but I send you a couple of spikes, by which you can see the colour and vigour, and be a better judge whether such a variety can under any conceivable circumstances be considered as "hardly worth growing." When potting time comes I shall be happy to send a pan of my variety to my friend "Delta," and when he gets a spike of eight flowers such as one of those sent, I think he will change his opinion of its value, and it has often been better done at Glasnevin.—FREDERICK TYMONS.

I send you flowers of *Disa grandiflora* Barrelli and D. g. *superba*. "Delta" (p. 106) speaks of the poorness of the Glasnevin variety. I think with him that it is not worth growing if the others are to be had. One thing in its favour is that under the same treatment it will produce twice as many flowers on a spike as the good forms.—FRED. BEDFORD, *Straffan, Kildare*.

* * Mr. Rawson's flowers are of the best and brightest variety, the colour of the sepals being a most vivid crimson, tipped with green, while the shell-like labellum is pale buff, pencilled and lined with carmine. Mr. Ewbank's flower was small, but well coloured. The spikes from Mr. Tymons were finely grown, one bearing eight flowers, but the variety is poor compared with that from Mr. Rawson. The Straffan specimens are uncommonly fine, particularly the *superba* variety, which has large, broad-sepalled flowers of a decidedly rosy tinge. The other form is identical with that from Mr. Rawson.—ED.

ORCHIDS AND PELARGONIUMS TOGETHER.

THE idea that Orchids cannot be grown successfully except in houses specially built and wholly devoted to them often deters persons from growing them; but that Orchids, especially those of the cool house section, can be grown successfully with other greenhouse plants we have often the opportunity of seeing. The other day we saw a small greenhouse containing an admirable collection of well-grown zonal Pelargoniums, and likewise a few hundred plants of *Odontoglossum crispum*, the latter being as fine as could possibly be seen. This was in Mr. H. G. Smythe's garden at The Nook, Forest Hill. The house is span-roofed; on the south side the Pelargoniums are grown, while the *Odontoglossums* occupy the whole of the north side. The health and vigour of the Orchids are not less remarkable than those of the Pelargoniums, which are at the present time fairly smothered with bloom, some of the trusses being very large. Mr. Smythe, being an enthusiast in Pelargonium culture, knows what is good among them; therefore as his space is limited he grows only a selection of the best, and as a list of the best of his select kinds may be useful to others, we give it here. One of the best double scarlets is Paul Charbonnier, a first-rate sort with large trusses and finely-shaped blooms of a bright orange-scarlet. Among the singles the best are Mad. Leon Delloy, delicate blush pink; Fanny Catlin, deep salmon; Hettie, carmine-scarlet; Rigolette, scarlet; P. N. Fraser, brilliant scarlet, eye white, trusses large and abundantly produced; Mrs. Gorton, cherry-crimson, eye white; Atala, bright orange-scarlet, admirable for winter flowering. The best of the pure whites are Eureka and La Perle, both first-rate sorts, the flowers of the latter being always pure and freely produced in large trusses. The foregoing list comprises the cream of this large collection, and represents every class of colour. Fine, however, as the Pelargoniums are, they will, Mr. Smythe assures us, have to give place to the Orchids which are found to be more profitable, particularly as a source of cut bloom in winter. He intends to grow nothing but cool Orchids, his success stimulating him to do so. This he attributes chiefly to not over-potting his plants, some with plump bulbs being only in 2½-inch pots packed about half a dozen together in a suspended pan. Another important condition he finds to be keeping the Sphagnum Moss always in a growing state, which tends to maintain an equable moisture in the soil.

PLANTS IN FLOWER.

Lælia elegans var.—A remarkable variety of this *Lælia* has been sent to us from Mr. Walker's collection at Staincliffe, Seaton Carew, through Messrs. Shuttleworth & Carder. Its flowers are fully a third larger than usual. The sepals are of a deep rich magenta blotched and marbled with a deeper colour, while the lip is of the deepest carmine-crimson imaginable, and being, as it were, overlaid with a velvety lustre, it is extremely beautiful. The nearest approach to this variety that we know is that called *L. elegans prasiata*, but Mr. Walker's variety is far finer.

Govenia fasciata.—This is a distinct-looking Orchid from Mexico. It is either new or rare, as the plant which Mr. G. F. Wilson showed on Tuesday last seemed to be unknown to experts. It is a *Bletia*-like plant with broad, plicate leaves with purplish petioles. The flower-spike arises from the base about 15 inches high. It bears flowers about the size and form of *Bletia hyacinthina*, but pure white except the two lateral sepals, which are delicately lined with pink. This plant has been flowered by Mr. Wilson in his orchard house at Heatherbank, Weybridge, but as he presumes it is almost, if not quite, hardy, he intends to try it in his experimental garden at Oakwood, Wisley, next season. It is an interesting and pretty plant.

Cattleya Sanderiana.—If ever a variety of an Orchid deserved a distinctive name, it is a magnificent form of the new *Cattleya Sanderiana*, which has been sent to us from Mr. G. Hardy's garden, at Pickering Lodge, Timperley, by his gardener, Mr. J. Hill. It differs from all other forms of *Sander's Cattleya* that we have seen, both as regards the large size of the flowers and the superb colouring. The flower in question measured just 8 inches across the outspread sepals, which are elegantly twisted and of a deep lilac mauve colour with a broad stripe of white at the base of each lateral sepal, and the face of the sepals are also marbled with whitish blotches. The side sepals are stout enough to hold themselves up firmly, thereby giving the flower a fine bold appearance. The lip is 3 inches across and somewhat resembles that of a magnificent form of *C. Dowiana*. The lower half of the lip for about $1\frac{1}{2}$ inches is of an intensely deep carmine-crimson, which runs upwards into streaks and pencillings which spread laterally over a very large blotch of yellow of various shades, edged by a frilling of amethyst. Mr. Hardy may well be proud of his gorgeous variety, and we are pleased to hear from Mr. Hill that he has a fine plant of it with twenty-three bulbs furnished with thirteen leaves, some of which measure 11 inches in length by 4 inches in breadth, surmounting bulbs $10\frac{1}{2}$ inches long.

Dendrobium Dearei.—The more we see of this new Orchid the more are we convinced of its sterling merit as a garden plant. It will, without doubt, soon rank among the most popular of Orchids on account of its various good qualities. It is a free grower, an abundant flowerer, and, above all, its flowers are large and as white as those of a *Eucharis*, and of such firm texture as to enable them to last a long time in perfection. Hence, this *Dendrobe* possesses all the elements of a first-rate garden Orchid, one that may be grown with advantage by those who do not grow collections of Orchids. As yet, the plant has not been seen in its true character, but each season brings to light evidence of the rapid progress which it is making under the skill and attention of our Orchid growers. Besides that grand specimen of this *Dendrobe* which Sir Trevor Lawrence showed last year at South Kensington, we have seen no finer example of it than a specimen that has been sent to us by Mr. Hill from Mr. Little's garden at Hillingdon Place, Uxbridge, where a choice collection of Orchids is being formed. The specimen in question consists of eleven flowers in a dense cluster on the top of a stout stem, having more the appearance of a bridal bouquet than anything else with which we can compare it. We should like to hear from Mr. Hill something in regard to the treatment which he gives this *Dendrobe* which is carrying twenty spikes.

Rose Etendard Jeanne d'Arc.—This new white *Gloire de Dijon*-like Rose has flowered here, and a lovely Rose indeed it is. With the dark green healthy foliage of its parent it sends out numerous strong buds, which are to all appearance *Gloire de Dijon*s, but are white with the slightest suspicion of colour in the centre. We do not want anything much better than the *Gloire*, but this variety has a novelty which is extremely pleasing to the lover of garden Roses.—G. H. C., *Brookfield, Hathersage*.

Carnation Miss J. Townshend.—Among a gathering of seedling Carnations sent by Mr. Baylor Harland, of Cork, is this beautiful new seedling, which is unquestionably one of the best we have seen. Its flowers are large and full, the petals broad, of good substance, and of a beautiful sulphur-yellow, flaked and pencilled on the margins with various shades of carmine. It is sweetly and strongly scented, and is altogether a fine kind. Among the other blooms are some uncommonly good unnamed self-coloured varieties.

Gentiana ornata.—This little *Gentiana* is without doubt a gem of the first water among alpine plants. We had no idea that it was so beautiful until a few days ago, when we received from Mr. Wood, of Kirkstall, a few flowers of it. They are about the size of those of *G. verna*, but of a different shape, and have not the spreading corolla of that species. The whole flower is of the most lovely turquoise-blue imaginable. Mr. Wood says that the plant loves the hot weather, for with plenty of moisture at its roots it has been blooming away gloriously all through the late spell which we have had of tropical heat. This is one of the Indian species, and until late years has been extremely rare in gardens; indeed, cultivators have not troubled themselves much about it, as it was considered to be rather a "miffy" plant. We are sure, however, that if lovers of alpine plants could have seen Mr. Wood's flowers, they would have been induced to give this fine *Gentian* more careful attention than it has hitherto received.

Streptocarpus Rexi.—For the edging of *Selaginella*, which lately belted the succulent beds in No. 5 house at Kew, this *Streptocarpus* has been substituted—at least round the *Agave* bed. It is now flowering freely, and a few of the new white flowered one, *S. parviflorus*, being interspersed with it, the effect is excellent. Though not a hardy plant, *S. Rexi* appears to be very suitable for edging beds in conservatories, *Camellia* houses, &c., and as it seeds freely, it may be raised in any quantity in spring, and pricked out in the beds as soon as strong enough. The Kew plants were raised from seeds sown last March, and they are now very strong, some of them bearing from six to nine flower-spikes each, with plenty not yet developed. It is just possible that in a sheltered position this Cape plant would thrive out-of-doors during summer, and now, when everybody appears to be looking after new plants for summer bedding, it may be worth while testing it. No doubt the best variety is that which has recently originated at Kew, and is named *S. Rexi* var. *multiflorus*, having, as it has, scapes bearing sometimes as many as eight or ten flowers each.

Habenaria rhodochila.—A pan of a very pretty and apparently free flowering terrestrial Orchid may now be seen in flower under this name in the Kew collection. In appearance there is a close relationship between some of the British Orchids and this plant, the foliage resembling a *Neottia*, whilst in the curious form of the labelum this new *Habenaria* reminds one of the *Monkey Orchis* (*O. Simia*). *H. rhodochila* bears an erect spike about 9 inches long, the upper portion being clothed with about a dozen flowers, the ovary of which is an inch long; the sepals are joined at the top, so as to form a hood, inside which the column is enclosed. The front of this hood is almost covered by a curious green appendage, to which, again, four horn-like processes are attached by

their bases, and down at the bottom of the cup formed by these is the entrance to the spur, which is very narrow and nearly 2 inches in length. The lip is three-quarters of an inch wide and 1 inch long, and is bright cinnabar-red in colour. The connection of the nectary or spur with the reproductive organs is not very apparent, the singular process which almost covers the entrance to the hood, in which are the male and female organs, completely barring the way to any insect which might be tempted to go in search of the food secreted at the bottom of the long spur. Apart from this *H. rhodochila* is a promising little Orchid for cultivation in this country. It has been introduced from the Lo-fau-chan Mountains, in North China.

Nymphaea zanzibarensis.—In the Water Lily house at Kew this variety of the common *N. stellata* has now attained something like full dimensions. When figured in *THE GARDEN* last year it was pointed out that, although a life-like representation of the plant as it was then at Kew, it failed to give a correct idea of the real magnificence of this fine Water Lily. The flowers at Kew now are wider than one of the pages of *THE GARDEN*, being 9 inches in width and in depth about 4 inches. The four broad sepals are recurved, and above them rise the blue-purple petals arranged closely together, so as to form a cup inside which the bright yellow stamens are beautifully displayed. It is impossible to convey any true idea of the rich beauty of this plant. Certainly next to that queen of water plants, *Victoria Regia*, the *Zanzibar Nymphaea* is the finest of all Water Lilies. Seen by the side of the large crimson-flowered *N. devoniensis* and the pure white and equally large *N. dentata*, one is almost overcome with admiration for these three grand plants. Such was our experience when, on visiting Kew a few mornings ago, we entered the Water Lily house at about 11 o'clock, and saw the red and white kinds just before they closed, and the blue ones just after they had opened. At this time of day the richness of the Kew collection of *Nymphaeas* can be seen to advantage; altogether we counted 111 *Nymphaea* flowers all open at about one time. The yellow-flowered species had just commenced to bloom, and will no doubt continue to develop flowers for some weeks yet.

Bromeliads at Kew.—Under the more suitable treatment obtainable in the T range as compared with what was possible in the Palm house, where the Kew collection to Bromeliads used to be, there is a marked difference in the health of the plants and in the number of flowers which they annually produce. It has been demonstrated by this change in respect to the treatment that a close, moist house and plenty of sunshine are more conducive to their health and floriferousness than the dry treatment to which Bromeliads are so often subjected. The following kinds are now in flower at Kew, viz: *Billbergia Portiana*, the grandest of all the *Billbergias*, and one of the most brilliantly coloured of flowering stove plants; *Pitcairnia Andreana*, a low-growing species with a spike of tubular orange-red and yellow flowers; *P. zeifolia*, *P. angustifolia*, *P. Decaisneana*, three handsome tall-growing species, their branching spikes bearing a numerous crop of bright red flowers; *Echmea corulescens*, producing a spike of lilac berries, which are white before ripe and very pretty; *Tillandsia splendens*, with broad transverse bands of blackish brown on its leaves, and a tall sword-like scape formed of the sheathing bracts, which are flame-red in colour, the flowers themselves being hidden beneath the bracts; *Vriesia bellula*, characterised by a short spike, upon which the dark red and green boat-shaped bracts are distichously arranged; *Echmea fasciata*, a Pine-apple-like plant, with a dense head of foliaceous bracts, spine-edged and pale salmon in colour. One of the prettiest of the coloured-leaved Bromeliads is *Nidularium Meyendorfi*, whose innermost leaves are deep crimson and form a richly coloured cup, in which the head of insignificant flowers is enclosed. *Tillandsia anceps* is showing for flower, as are also several other species more or less ornamental in character.

FLOWER GARDEN.

WALL PLANTS.

YOUR correspondent "J. G.'s" recommendation of early spring or autumn for the establishment of plants on old walls is good, though occasional exceptions may require to be made in the case of some of the more southern tenderer species where these have not been already hardened by exposure to the open air. In the milder and moister districts of England the list of acclimatisable wall plants is much extended; e.g., among the Campanulas, the lovely little *Campanula muralis* will be found hardy in many situations, even in Scotland, and that much larger

a good deal, i.e., on a sunny exposure. On a northern one it would, however, doubtless do better. I have found some of the taller growing Campanulas thrive not altogether badly on wall tops alongside of their frequent denizens, the Wallflower, the handsome spiked tall *Linaria purpurea*, and that red Valerian, *Centranthus ruber* (scarlet, red, and white), which is so great an ornament of many of the Devonshire wall tops, and the Snapdragon; in the same situation I find the Swiss *Salvia glutinosa* thrive, naturalising itself with me, well mixed up with the red flowering Ribes. One of the prettiest little gems in its way for a moist nook of a north "barled" or rough cast wall is the little Swiss *Viola bifolia*, with its cushions of bright tender green foliage studded

where. It would be well worthy of trial for naturalisation in sheltered, but not overshadowed, situations within reach of the spray of waterfalls. C. C., *Aberdeenshire*, in *Field*.

WHITE PYRENEAN RAMONDIA.

A LOVELY addition to the rock garden is this new white-flowered variety of *Ramondia pyrenaica*. Our illustration of it is engraved from a photograph recently sent to us by Mr. Otto Forster, of Lehenhoff, near Schrebb's, Austria, who considers it to be one of the rarest and most beautiful of alpine plants. He says that the flowers are nearly pure white when opening, but become tinged with a faint tint of rose later on. Our en-



White Pyrenean Ramondia. Engraved from a photograph taken in the garden of Mr. Otto Forster, of Lehenhoff, Austria.

flowered graceful *C. fragilis*, which is such a conspicuous ornament of limestone rocks in the south of Italy, though considerably less frost-resisting than *muralis*, will be yet well worthy of a trial in our very mildest regions, in which writers on gardening inform us it will thrive on an ordinary rockery. The same may be said of two other southern trailing species, *C. garganica*, of which there is a white as well as the better known purple variety, and *C. Portenschlagiana*. The two hybrids from *fragilis*, named *haylogensis* and *Smithi*, are also trial-worthy, as I find them hardier than the pure species, which will not stand outside with me. I have no doubt that the well-known Swiss *C. pusilla* (white and blue) would make a most ornamental plant for naturalisation on old wall copings in moister districts, though in the dry climate of the district in which I live it burns up

with little golden stars. In any situation but that which thoroughly suits it, and can develop its true character, this plant is a very poor one. Having brought it from Switzerland between thirty and forty years ago, and planted it in rough gravel at the foot of such a wall as I have alluded to, I soon found it spread up the wall, not by creeping stems or roots, but by the seed which is (and in the Wood Sorrel, &c.), as in the other *Violas*, projected forcibly to some distance when ripe. The plants thus spontaneously colonising the wall formed in winter curious looking large masses of fleshy roots, each mass about the size of a small fist, while in summer the very pleasing green foliage and golden stars were the admiration of all who saw them. Let no one, however, expect any satisfaction from it where drying, withering east winds can find their way to it, either on walls or else-

graving does not represent the flowers quite life size, the largest being fully $1\frac{1}{2}$ inches in diameter. We have not yet heard that this beautiful novelty has made its appearance in English gardens, but probably it may do so before long. A well grown tuft of the original *Ramondia* is such a charming plant, that all who know it will be desirous of making the acquaintance of its white congener.

The photograph which has been sent us represents a rocky bank in Mr. Forster's alpine garden, on which are large and luxuriant tufts of *Ramondia*, including the white variety. It is not one of the most difficult of plants to cultivate well, but the conditions under which it seems to thrive best are shade and a tolerably moist spot. The finest plants we ever saw of it were at St. Alban's Court, near Canterbury. In the excellent alpine garden there there is a rocky declivity facing

the north, and the whole side of it is covered with large tufted plants of *Ramondia* furnished with broad leathery leaves of that delightful green which is a sure indication of vigorous health. This fine alpine seems to revel in a deep fissure between masses of rock where sufficient moisture exists for the roots without being at any time stagnant. In some gardens in Scotland we have seen it thriving fully exposed, but as a rule it is best to afford a little shade. The new *Haberlea rhodopensis* seems to flourish under precisely the same conditions as the *Ramondia*, and the other day we saw them side by side growing in a little artificial cave planted on the flat with stones around them. As to soil, there is no doubt that it is necessary to grow the *Ramondia* in either a fibrous loam or loam mixed with fibry peat. W. G.

CARNATIONS OUT OF DOORS.

In the sense of being known, nothing is more popular than the Carnation, but, as regards making good use of it, few things are so little thought of. And yet we know of nothing that would better repay one's trouble. The very brightest gardens we have seen of late, years, say about the end of August and beginning of September—a very important time, indeed, for all country-house people—were those with Carnations well grown and plentiful. Even small gardens with them are charming. They are flowers of our climate, and are none the worse for wind and rain. Cool western seashore and hill districts are, if anything, best for them. Considering how much of our country, with its long and varied coast-line may be described in these words, we may see how valuable these qualities are. But the warmer Surrey and Sussex and Kent grow them admirably too, though the bloom is not so prolonged. We doubt, however, if the same bright fresh colouring that is seen on the east coast at Scarborough, or, say, on the west coast in Anglesea, or in Ireland, is often seen in the warm southern gardens. Be this as it may, the result is always good enough to repay our trouble, and the flower is the queen of the summer and early autumn garden; but not if the gardener lets it come second to his bedding plants in importance, or forgets it altogether, or puts perhaps a few plants along the margin of a shrubbery. We believe that few who know the merits of the various groups would hesitate to place it next to the Rose in importance for our outdoor gardens. It, moreover, is admirable for association with the Rose, and those who will not spare it special beds may make a good attempt among the beds of Roses, on their own roots or otherwise. The plants fill up admirably the space between dwarf Roses on their own roots. A Rose here and there adds to the charm of the autumn show of the Carnation, while the foliage of the plants contrasts agreeably. A few groups of good Stocks here and there, and tufts of *Violas* and *Pansies* along the margin, together make an August or September garden which would charm the most fastidious.

As to the kinds, there are enough for all tastes. Among the Cloves alone, after the old deep crimson, we have a fine white, a brilliant scarlet, a delicate peach, and various others. Many have in fact been raised, and it is for each to choose the colours and kinds he likes best, and, by remembering to increase them from pipings or cuttings every year, keep up a good stock for oneself and friends. For our experience is, that there are few things people are so pleased to get as a few stout young plants of these Clove Carnations. There has been such a run on them of late years, that it has been sometimes difficult to get them in the trade.

Apart from the Cloves, there are the various self-coloured and other Carnations, which are happily now being taken up by some of our enterprising nurserymen, and are no longer difficult to obtain in various ways. We have lately seen many fine forms, mostly in gardens of the smaller class. One may often secure plants or cuttings from such gardens. Once possessed of a good form, it should be a matter of care to keep a good stock of it

The neglect of these things should no longer be borne by the most long-suffering, and those who are not their own gardeners should say so to their men.

The plant should also be raised from seed every year, for two reasons—securing a good stock of vigorous young plants, and for the chance of getting new forms suited to one's taste or soil. The range of colour is endless, and by raising seedlings annually anyone may hope to add new treasures to the general garden stock. People who raise many other things from seed often forget how easily these are raised. Many seem not to know the fact. If there were no other good reason to raise seedlings; it is in some places desirable to do so to find varieties to suit the soil. Though the plant is far from fastidious as regards soil, yet we have known some places where the plants generally did not succeed. One showy kind would be an exception. Obviously, if one kind will succeed more than others, it may be possible by seed-raising to get more of the same taste and of different colours. Both our own seed houses and the French and German offer selections of Carnation seed. Our advice would be to secure a packet of each distinct strain, and go to work. The plants grow freely the first year, and bloom strongly the second. By sowing a batch every year we may have each season the pleasure of watching the bloom of a new series, containing perhaps many single flowers, which the raiser may not care for, but also perhaps showing some new beauty which may find a place in English gardens for generations to come. The Carnation, while often sought by the lady, is also a poor man's flower, requiring no fires or glass for its care; so that those raising more stock than they themselves want need not doubt that they could gratify neighbours of any degree by what they did not need themselves. R.

Erysimum Peroffskianum.—I saw a mass of this in early spring and thought it formed one of the most telling bits of colour I ever saw. A plant or two after blooming had been accidentally cast down at the foot of a sunny wall, the result of which was a crowd of young plants. There was no prepared soil for them to grow in, nothing but the bare gravel walk, and they seemed quite at home there, growing in fact as well and appearing just as happy as Wallflowers do in similar situations. The effect of this mass of rich orange in the sunlight in early spring was charming. This annual, so distinct in colour from all others, requires to be sown early in September in rather poor soil; it then gathers strength by winter and makes a brave show quite early in the year, being the first of the hardy annuals to come into bloom.—J. C., *Byfleet*.

Arrangement of border plants.—The following is the way in which I have arranged the plants in a border in my garden. Being a lover of all kinds of flowers, I could not do without the old-fashioned perennials which I knew when a child; so in order to combine the new system of bedding out with my old favourites, I adopted the following plan: The border allotted to flowers at the end of my pleasure ground is 210 feet long and 8 feet wide. Being on the slope of a hill, I was obliged to build a low wall in the centre to make the ground level. On the top of this little wall I put some tiles, so that there is room to walk and gather the flowers on either side. The upper division is planted with Roses, at one side some tufts of *Gladioli*, and next the wall is a long row of alpine *Auriculas*. The lower division is festooned and edged with *Echeveria secunda glauca*. The large divisions are planted with tall herbaceous plants—*Spireas*, *Phloxes*, *Delphiniums*, &c.—inside, lower growing ones filling up outside. The small divisions are filled with bulbous roots in autumn, and when taken up zonal or Ivy-leaved *Pelargoniums* take their place for summer. In the early summer the soft orange-scarlet flowers of the *Echeveria* give a charming effect to the whole border. Outside is a row of white-leaved *Pelargoniums* in summer and *Crocuses* in spring,

the whole being finished with a Grass verge next the walk.—D. B., *Dublin*.

Gynura aurantiaca.—When first brought into notice this was said to be a desirable bedding plant, and certainly as seen in spring when but a few inches high, covered so densely with hairs as to make every leaf look like a bit of purple plush, it was full of promise, but, like many other much lauded subjects, that early promise has not been carried out. My experience of it is that when planted out it grows away strongly and soon runs up a foot or two in height with scarcely any branches, while at the same time much of that beautiful purple colouring belonging to its early stages is lost. It is by no means attractive as thus seen, and if kept indoors altogether it soon runs up spindly and loses its colouring, while disease often attacks it and gives it a sickly look. The flowers, it must be admitted, are borne during winter when blooms are comparatively scarce, but being a good deal like those of the Sow Thistle they do not find many admirers. It can be struck easily from cuttings and it soon establishes itself when potted off, so that pretty little plants of it a few inches high are soon obtained and in that state may be used for many purposes, but as a bedding plant it has yet to make its mark.—H. P.

INDOOR GARDEN.

CYCLAMENS EARLY IN WINTER.

THE end of this month is the proper time to sow seed of the Persian *Cyclamen* in order to obtain plants that will flower in a satisfactory manner in the early winter months of 1885. I am quite aware that it may be had in flower in less time than I have here allowed, but my purpose is to direct attention to the best way of obtaining plants of a suitable size to be effective in the dwelling-house or in the conservatory. The seed may be sown in a pot or pan, according to the number of plants required. Any fairly light sandy soil will do for the seedlings, and as the seed is larger than that of many other plants, it may be buried a little deeper, but only so deep as just to be well covered. I may remark here that only those in a position to give the plants a higher temperature than that of an ordinary greenhouse during winter are recommended to sow the seed at this time of year, for, in order to obtain fair-sized plants in the time specified, the plants must be raised in heat, and kept through the winter in a temperature ranging from 55° at night to 70° during the day. Therefore as soon as the seed is sown the pan should be placed in the stove or in some structure similarly heated, and shaded from bright sunshine, so that the surface soil may not dry up so quickly as to require watering every day. Good seed does not, as a rule, fail to produce a fair percentage of plants if carefully attended to in the way of moisture, but an excess of moisture in the soil and a low temperature will cause it to rot before it has had time to start into growth. Unless the young plants stand very closely together in the pan, no great hurry need be made to move them out of it. They ought to stand in the seed pan until they have produced four leaves, and then they may be expected to have made sufficient roots to bear removal without suffering any serious check. From the pan they should be put into 3-inch pots.

THE SOIL for *Cyclamens* should be fairly light and rich, and should consist of equal parts turfy loam, peat, and well rotted hotbed manure. If the peat does not contain a fair proportion of sand, some should be added and well mixed with the other ingredients. Except for the first potting the soil should not be sifted, but well beaten up on the bench with a spade, the rough lumps being picked out.

PLANTS RAISED FROM SEED as here directed will be ready for single pots early in January. As soon as potted let them have a warm position and a fair amount of light, setting them where they can be syringed twice a day and be kept free from

thrips and green fly. About the end of March they should be ready for a shift into $4\frac{1}{2}$ -inch pots, and should be set in the same quarters again. They will not require any more pot room, as the Cyclamen is one of those plants that suffer from being over-potted, or, as we gardeners say, they flower most profusely and keep in best health when the roots feel the pots. Early in June they may be placed in their summer quarters, which should be a pit or frame, where they can be shaded in very hot weather, and where ventilation can be carefully attended to. They should only have a moderate supply of air, and should be shut up early on sunny afternoons in order to keep up a genial growing atmosphere about them at night. The moisture at the roots must be kept up by giving sufficient water as often as they require it, and no more. In September they should be showing flower, and then they should have a warm shelf in the greenhouse. Early in November they ought to have the benefit of a slight increase in temperature, when they may be expected to flower freely, and will continue to do so for some time. J. C. C.

POINSETTIA PULCHERRIMA.

PLANTS of this with bright scarlet bracts and healthy foliage may sometimes be seen in mid-winter in pots not, perhaps, more than 7 inches in diameter. Such plants, however, it is to be feared, are an exception to the rule, as in many gardens Poinsettias may be seen in winter either over-potted or divested of a large proportion of their principal leaves. The retention of the foliage until the bracts are developed is one of the best indications of successful culture. As soon as any error in management is committed part of the leaves turn yellow and eventually die away. Poinsettias are not difficult to grow if a few all-important points are kept in view, and the plants are treated accordingly. The roots must not be broken more than possible in repotting, and the plants when once rooted should not be allowed to become starved or pot-bound. Sudden changes of temperature are injurious, such as shifting the plants from a somewhat cool house or frame in autumn into a much warmer position, and the same may be said regarding their removal from heat into cooler quarters in the younger stages of growth. In either case the leaves are liable to be affected. Another point is that the roots will die in autumn if the plants are allowed to remain too long in frames where they are exposed to a continued low temperature or too much moisture at that season.

ANNUAL PROPAGATION.—The general plan now adopted is to propagate annually, growing on the plants to produce one head of bracts each, and afterwards retaining them for a supply of cuttings the following year, when they are thrown away. For growth in small pots this is the best method, but if large branched specimens are required, the old plants must be kept and grown on, as cuttings when stopped produce only small heads. The old plants must be kept in a warm place after flowering until June, when they should be watered and started to produce cuttings. It is best to keep them quite dry during the resting period. Plants kept on the shelf of a warm potting shed produced when started much stronger cuttings than those in a warm house and watered occasionally. When the cuttings are about 3 inches long they should be taken off below a joint, with or without a heel, and inserted in small pots singly without crocks, and placed in a warm, close frame in the propagating house. This plan is much better than putting several cuttings in a larger pot, as injury to the roots when repotting is thereby avoided. When the cuttings are rooted, air should be gradually admitted until they are strong enough for the open house, when the roots will soon be found to have reached the sides of the pots. The compost best suited for Poinsettias is a rich, rather light one, consisting of about half turfy loam, not broken too fine, with the addition of dried cow manure and leaf soil in about equal proportions. A little soot and some broken charcoal are also good addi-

tions; the former imparts a dark colour to the leaves, and the latter keeps the compost open. Pots of sizes to give a gradual shift should be selected; thus cuttings put into 3-inch pots may be transferred to 5-inch ones, and those put into $2\frac{1}{2}$ -inch pots may be potted on into 3-inch pots, and again into 5-inch ones, in either of which sizes they may be flowered. Plenty of light must be accorded Poinsettias at all times, or they will soon draw up tall and weak. When well started after the final potting a better place can scarcely be selected for them than a frame or pit in which there is a spent hotbed, as the plants can be kept almost touching the glass at all times by removing the material from underneath as they grow in order to lower them. Plenty of air and water with a syringing each night and morning will best suit their requirements and induce short-jointed strong growth. Exposure to full sunshine should also be allowed, unless it be unusually hot, when a thin shading should be applied on bright days. The stock of plants must be removed to a somewhat warmer position early in October, and they may be gradually introduced to more heat in batches as required. The bracts are generally formed and nearly developed before the flowers open. During this stage plenty of heat and moisture should be given and artificial or other manure in order to secure them as large as possible; a temperature of about 60° will retain them in beauty for a long time afterwards. The height and strength of the plants will depend a good deal on the time when they were propagated and the strength of the cuttings inserted. The latter is a matter of importance, weak cuttings being undesirable. Cuttings put in as recommended any time in August will produce plants a foot or more high to come in before Christmas, and it is questionable if these are not more useful than others propagated early in July and which are consequently much taller and stronger. It is, however, desirable to put in successional batches of cuttings that may be obtained from the same plants, and so procure plants of both descriptions.

THE OLD PLANTS of Poinsettias if required to be grown on should be shaken out and potted in somewhat smaller pots than those in which they have been growing at starting time. They should have been cut back rather hard, as if long old shoots are left the best young ones always proceed from their points, and the plants are thereby made leggy. Such shoots may, however, be utilised for early cuttings, and secondary growths encouraged for the old plants. The after cultivation may be very similar to that recommended for plants from cuttings, with the addition of larger pots and consequently more space. The old type of *P. pulcherrima* is still mostly grown. There is said to be two varieties of it, one being in advance of the other in arriving at maturity, but I am not aware that I have seen any difference in this respect, except that caused by retarding them in cultivation. The white form, *P. p. alba*, seems to be almost lost. It is not of much use except as a variety, but it should not be discarded altogether. The double form, *P. p. plenissima*, received quite an ovation on its introduction, but now we rarely hear of it. What can have become of all the plants distributed of this variety? J. G. K.

Pancratium maritimum.—Seeing it stated in THE GARDEN (p. 42) that the flowering in England of this *Pancratium* is rare and noteworthy, allow me to say that I have a good spathe now thrown up by a bulb in my greenhouse. The blooms not being as yet open, I cannot report further upon it, but I may mention that it is under ordinary temperate treatment. It is potted in strong yellow loam in a small pot, and stands on the stage in a sunny spot. This is the first flower I have had from *P. maritimum*. Bulbs in the border have not flowered with me. *Ismene calathinum*, under the same conditions, is making remarkably fine foliage, but does not show for bloom yet.—F. C. C. BARNETT, Reading.

Adiantum stems as stakes.—Slender, almost invisible, stakes are often wanted to support

individual flower-stems of various kinds, such as *Gloxinias*, &c., and where no great amount of strength is needed, the mature stems whose fronds have withered of the stronger growing *Adiantums* answer admirably. Being thin and black they do not show like twigs or common stakes, and are, nevertheless, wonderfully stiff and rigid. Here *A. formosum* grows wild under the stages, and is freely used for cutting. The stems, when nothing else is left of them, come in handy for flower supports, and last a long time. Various other upright growing species, such as *A. cardiophyllum*, *A. trapeziforme*, and many more, are also available.—G. P.

Peperomia resedæiflora.—Some of the *Peperomias* are pretty creeping plants, and suitable for suspended baskets, or, in company with others of this class, they may be used for carpeting stages on which pot plants are standing, thus obviating that naked appearance which is so often seen, and yet so easily remedied by means of such plants as this, the variegated *Panicum*, *Fittionias*, *Pellionias*, *Selaginellas*, and others. In the kind under notice, however, the principal feature is the flowers, which are borne in dense conical-shaped clusters at the tips of the shoots. Before expansion they are of a greenish tinge, but when open pure white. In the T range at Kew there is a panful of this *Peperomia*, which when in flower is so attractive as to merit more extended cultivation, especially as it needs only the most simple kind of treatment.—ALPHA.

Pelargoniums for pot culture.—I fully agree with all Mr. Groom urges as to the usefulness and great staying power of the petals of doubles as compared with singles, and would ask him to name a few of those he finds best, everything considered. Many of the varieties produce merely a truss, often imperfect, and are hardly worth growing; while others require so high a winter temperature to bloom at all as to make them much too expensive a luxury for the vast majority. The freest bloomer I know, and one that requires no forcing, is Cannell's Lord Mayor, deep purple-pink. It is of dwarf habit and very compact. Even smaller and dwarfer is Lemoine's Comtesse de Tannberg. The trusses stay on it for a month. I hear a good deal of an American variety raised by Mr. Thorpe, named H. Cannell, brilliant scarlet, and said to be a very free bloomer. Edouard is good among oranges.—W. J. M., Clonmel.

FRUIT CROPS.

SUPPLEMENTARY ENGLISH REPORTS.

Mentmore, Bucks.—Apples here are a very poor crop. The following varieties on dwarf Paradise stocks are bearing a moderate crop, viz., Early Margaret or Striped Juneating, ripe the end of July; Mr. Gladstone, a few days later than Juneating, a fine, bright, early Apple; Emperor Alexander, Worcester Pearmain, Ringer, Warner's King, Irish Peach, Cox's Orange Pippin, Lady Henniker, Yellow Ingestre, Scarlet Nonpareil, Cockle Pippin, Rymer, Cellini, and D. T. Fish, the last like Warner's King, if not identical. Peaches on walls are very scarce; the first to ripen was Early Beatrice (July 25), a small bright Peach, and Early Louise, a week later, but much larger. Pears are a failure; small fruits abundant. Strawberries good, but soon over; our best this season were Crown Prince (early), Duke of Edinburgh, Moffat's, Elton Pine, and Loxford Hall; Keen's Seedling is still good if care is taken to plant runners only from the most productive plants. Our best Gooseberry again has been Henson's Prolific, a variety which everyone should grow. Raspberries were soon over, owing to the dry weather; Baumforth's Seedling is a handsome-looking variety and vigorous in growth.

POTATOES are excellent, both as regards crop and quality. Snowdrop, an early kind, promises to prove in every respect a very superior variety. Among Peas we find Veitch's Extra Early Selected to be one of the earliest; American Wonder seems too tender for autumn sowing; for main crop we

find nothing better than Marvel, Veitch's Perfection, Telegraph, Reading Giant, and Ne plus Ultra. We have found that the new French Bean called Dwarf Ne plus Ultra is earlier than Osborn's and of first-class quality.—J. SMITH.

Gunton Park, Norwich.—Apples here are a fair crop, though at present small, owing to the severe drought which we have had; Lord Suffield, Lord Grosvenor, Pott's Seedling, Keswick Codlin, Lane's Prince Albert, Ribston Pippin, and Colonel Harbord's Pippin, a local Apple that never fails to bear in this neighbourhood, are all fairly well laden. Of Apricots we have an abundant crop, the finest for some years past; the trees have, however, required a plentiful supply of water to prevent the fruit from falling. Figs are plentiful, but very small; Filberts are an average crop; Currants, Red, White, and Black, plentiful and good; Cherries, dessert, on east walls good, especially Black Tartarian, Elton, Black Eagle, Belle de Choisy, and Bigarreau; Bigarreau Napoleon now ripe is abundant and excellent. The black aphid was very troublesome early in the season in the case of Cherries, and the trees had to be well watered at the stoning period to save the crop. Gooseberries are a medium crop; Peaches in a few sheltered places and Nectarines in favoured spots are excellent crops, and the trees are looking well. Pears on walls are generally thin; the following kinds are carrying a good sprinkling of fruit, viz., Jargonelle, Doyenné du Comice, Josephine de Malines, Conseiller de la Cour, Marie Louise d'Uccle, Prince Consort (Huyshe's), Glou Morceau, Louise Bonne de Jersey, and Jersey Gratioli. The only kinds bearing on standards worth notice are Louise Bonne de Jersey, Doyenné du Comice, Jersey Gratioli, and Beurré Clairgeau. Plums are a very light crop and the trees are much injured with greenfly. Rivers' Early Favourite is the only kind that is cropping well; Kirke's, Mitchellson's, Victoria, Pond's, and Coe's (generally reliable) are all very thin. Raspberries were a plentiful crop, but the fruit was small and quickly over on our dry sandy loam. Strawberries were fine, abundant, and excellent in flavour, but they were over in a fortnight, owing to the intensely hot and dry weather which we have had; Comtesse d'Héricart de Thury, Sir J. Paxton, President, James Veitch, British Queen, Sir C. Napier, Auguste Necaise, Countess, Amateur, Dr. Hogg, and Crimson Queen ripened in the order here given. The three last mentioned were the latest, and were extra fine and good. Walnuts generally are abundant.—WM. ALLAN.

Idsworth, Horndean.—Apples here will not be an average crop this year. The sorts which are doing best are Keswick and Manks Codlins, Hambleton Deux Ans, and Lord Suffield, and there is a sprinkling of other kinds. Pears are generally a poorer crop than usual; the majority flowered well, but too early, and were cut off by late frosts. Plums are a very poor crop—the worst we have had for years. Apricots are not grown in this part of Hampshire. Cherries are almost a failure with the exception of Morellos, which are an average crop. Figs outside are generally very promising. Strawberries were a good crop, but soon over. Gooseberries an average crop. Black Currants a heavy crop. Red and White Currants a medium crop. Raspberries would have been a good crop, but the dry weather affected them. No Peaches or Nectarines are grown outside here. Medlars are not an average crop, and Quinces are a failure. Nuts, such as Filberts and Walnuts, are a medium crop. Taken altogether, the fruit crop hereabouts is not a satisfactory one. With few exceptions bloom was abundant, but unkind weather followed by drought put an end to our hopes of a good fruit crop.

POTATOES, I am pleased to say, are looking promising; early kinds, such as Veitch's Ashleaf, Sutton's Early Border, &c., have been plentiful and good. We are now lifting St. Patrick from our heavy soil in good condition. Magnum Bonum, Prince's Prolific, Young's Seedling, &c., amongst late kinds look well. Early Rose, which is growing satisfactorily this season, forms the staple crop

amongst cottagers; disease has, however, appeared in several localities, but not to any serious extent.—NEWMAN F. FULLER.

Preston Hall, Aylesford, Kent.—Outdoor fruit this year may be looked upon as a failure; with the exception of soft fruit, Peaches, Nectarines, and Cherries, there is not much left that was exposed to the frosts. Referring to my register I find that on April 23 there were 10°, 24 9°, 25 7°, 26 7°; May 1 4°, 6 3°, 7 5°. Our soil is a light loam resting on the Kentish ragstone and gravel; its depth in some places varies from 3 feet to 4 feet. The drainage is good, and undergrowth is thereby prevented, except in wet seasons. Our fruit garden is protected on the east and north by high trees. Of Apples we have about half a crop; Lord Suffield, Keswick Codlin, New and Old Hawthornden, Tower of Glamis, Stirling Castle, Stone's Apple, Dutch Mignonne, King Pippin, Oslin Pippin, and Sturmer Pippin are cropping best; Pears all through are about a fourth of a crop; of Plums we have very few—about a fourth; Victoria, Pond's Seedling, Czar, Rivers' Prolific, and Orleans are the best; Cherries were about three-fourths of a crop; late ones were fine, especially the Bigarreus; Morellos, too, are plentiful and good; Nuts are about half a crop; Cobs are the best; Raspberries showed well, and were plentiful but small, owing to the drought. We have had little rain for the past three months—only 4.03 inches since May 1. Strawberries were above the average, but small; Gooseberries were an average crop and good; Currants average; Peaches, Nectarines, and Apricots are good crops and swelling well. These were all covered, but they were sadly punished by aphides early in the season, but by means of continual washing they have grown away well.—A. WATERMAN.

Frogna, Foot's Cray, Kent.—Apricots, consisting of Moorpark and Powel's Late, are carrying full crops, others thin. Plums are almost a failure; there are a few Victorias and Prince of Wales. Morello Cherries are good; Bigarreau, Kentish, and Black Hearts very thin. Of Peaches we have a full crop of Dr. Hogg, Dymond, and Prince of Wales, and of Nectarines we have an average crop of Pitmaston Orange and Violette Hâtive; others are under the average. Of Figs, Brown Turkey is half a crop; others a failure. Apples are thin; the only sorts carrying a fair crop here are Kerry Pippin, King of the Pippins, Early Julien, and Old Hawthornden. Pears are a failure. Of Gooseberries we have a heavy crop of Crown Bob, Golden Lion, Lancashire Lad, and Warrington. Red and White Currants are very good; Black, heavy crops, but very much blighted. Strawberries were an abundant crop. Raspberries under average. Walnuts almost a failure. Filberts half a crop.

POTATOES here have been very good, especially Lee's Early Hammersmith. Later crops are looking remarkably well in both gardens and fields.—T. H. CRASP.

Welbeck, Worksop, Notts.—Apples here are a very fair crop, and the fruit is of average quality; Pears almost a failure; most sorts set well and had begun to swell when the frost destroyed them; some under nets fared little better. Plums are also a failure, and the trees have been much infested with insects; they flowered profusely and set well, but the frost brought them all off. Peaches and Nectarines on open walls are carrying very little fruit; the trees are, however, very healthy. On a wall 300 yards long protected by glass there is a full crop. Apricots on a wall about a quarter of a mile in length, and protected with glass, have been grand. They have been said to be such a sight as was never seen before. On every tree there is a full crop. Thinning was commenced when they were the size of small Beans, and from that time until they were finally thinned sixteen bushels were taken off. Morello Cherries are a good crop, sweet Cherries only partial; Strawberries have been good, but did not last so long as usual; bush fruits have also been fairly good; Black Currants

suffered most from frost; Gooseberries, owing to being thick and nearly in full leaf, escaped with little injury; Nuts are very few.

EARLY POTATOES are not so large as usual, but they are a very fair crop, and up to this time free from disease. Late sorts look well, and with another month's fine weather ought to be a grand crop.—R. CARR.

Belvoir Castle, Leicester.—The crop of Apricots, both on south, east, and west walls is the largest I have had for many years, and the fruit finer than usual. No very conclusive results can be mentioned from covering, as the trees that remained unprotected during severe weather in April are bearing fairly good crops, though scarcely equal to those on the south wall covered with protecting material. Peaches on south walls are bearing well, and Hale's Early is approaching maturity. This is the third year successively that abundant crops of Peaches have been produced on the trees occupying this position. Plums were caught at a very critical period, and the most abundant and promising bloom that has appeared for years was destroyed by frost; a few sheltered and unexpanded blossoms escaped, and light crops have been saved on young wall trees. Standard Plum and Damson trees in orchards are without fruit. Pears were in full bloom when frost occurred; these and other fruit trees were rendered sensitive to such ungenial influences by unseasonably warm weather in early spring. As an example of the influence of elevation and position on the bearing of fruit trees and their susceptibility to local climatic action, I may instance the great difference that exists in the crops of fruit in three orchards in which the subsoil is the same in each case, viz., strong clay, but of which the elevation is varied. The orchard which occupies the lowest position containing trees of various age and size, and consisting of Apples, Plums, Pears, and Walnuts, suffered so much from frost during the blooming period, that there is hardly an exception as regards bareness of the trees of fruit; the second orchard, perhaps 50 feet higher, and within a quarter of a mile of the first, is slightly better, having in a few instances light crops of the best bearing kinds of Apples; the third orchard, at a greater elevation than the preceding, and containing a similar class of trees affords good crops of the following kinds of Apples: Blenheim Pippin, Cox's Orange Pippin, Cox's Pomona, Court of Wick, Bromley's Seedling, Hawthornden, and Normanton Wonder, and remarkable crops of Siberian Crab. It is the first year in my recollection that the Damson trees in this orchard have completely failed. Nuts promise a fair crop; Morello Cherries are abundant. Currants and Gooseberries are not good crops; Strawberries and Raspberries bore average crops;—W. INGRAM.

Killerton, Exeter.—Apricots here are an average crop, but Peaches and Nectarines are generally scarce; on the following trees there is a good crop, viz., Hale's Early (gathered on the 31st ult.), Dymond, Dr. Hogg, and Noblesse. Early Cherries are good; Morellos below the average. Plums are scarce. Of Apples we have average crops, and the fruit is very fine. They are chiefly in orchards; among the dessert sorts the best are Ribston, Cox's Orange, and Sturmer Pippins, Summer Golden Pippin, King of the Pippins, Ross Nonpareil, Hubbard's Pearmain, Autumn Pearmain, and Pine-apple Russet; amongst culinary kinds the best are Dumelow's Seedling, Hawthornden, Lord Suffield, Manks Codlin, Blenheim Orange, Tom Putt, Cellini, and Mère de Ménage. Pears are below the average, but on some trees, such as Jargonelle, Williams' Bon Chrétien, Duchesse d'Angoulême, Victoria, Doyenné du Comice, Knight's Monarch, Beurré Clairgeau, and Glou Morceau, there are good crops. Strawberries, Gooseberries, Raspberries, and Currants (Red, White, and Black) have been abundant and fine. Of Nuts we have an average crop.

EARLY POTATOES are a good deal diseased; late sorts, such as Schoolmaster, Magnum Bonum, and Scotch Champion, are luxuriant and very pro-

missing. A continuance of fine weather will ensure heavy crops of good quality.—JOHN GARLAND.

Powderham Castle, Devon.—Apricots are a full crop and good in quality; Moorpark, Hemskirk, and Kaisha are the varieties grown and equally prolific this season. Peaches and Nectarines, which are in excellent condition, are bearing full crops and the foliage is healthy. Plums are a failure, and badly infested with aphides. The crop of Pears, too, is very bad; of dessert kinds we have only Moorfowl's Egg and Beurré Rance with anything like a crop; among stewing Pears, Catillac and Bellissime d'Hiver, the two latter bush trees. Early Cherries are of very poor quality, owing to the drought; Morellos on some aspects are very poor, those on aspects more northern very fair. Apples are under the average, but promise to be very fine, unless dry weather again prevails which may check their growth; such kinds as Keswick Codlin, Golden Noble, Cellini, Cox's Pomona, Winter Magetin, Lord Suffield, and Old and New Hawthornden are bearing full crops. Cider fruit are good in some localities, in others considerably under the average. Small fruits, such as Gooseberries, Red, White, and Black Currants, and Raspberries, have been very good. Strawberries were inferior during the early part of the season, owing to the drought, but the rain came just in time to finish off the majority of the crop, and latterly they were excellent, Sir Joseph being the principal cropper. Our soil is very light loam. Figs are very promising, and will be ripening in about a week or ten days. Walnuts are very abundant.

EARLY POTATOES were small, but of good quality. Disease made its appearance about a fortnight ago in Myatt's and has since appeared in the tops of the later varieties, but owing to the dry weather now prevailing its progress seemed arrested. Crops of the late varieties will, I have no doubt, be very good.—D. C. POWELL.

Castle Gardens, Warwick—Fruit crops here suffered very much from the late frosts and cold east winds which were so prevalent during spring. Apples, except a few Codlins and late varieties, are a light crop; Plums and Pears have little or no fruit on them; Peaches and Apricots, where covered with nets or shading material, are bearing a fair crop. All small fruits plentiful, especially Strawberries. Figs on walls are a good crop.—A. CHRISTIE.

Grimston Park, Tadcaster.—Apples are more or less a partial crop all round this district with the exception of Keswick Codlin, which is invariably good; the same remark applies to Lord Suffield, only that useful kind is not so frequently met with as its near relative, Keswick Codlin; Hawthornden, Warner's King, Cox's Orange Pippin, Beauty of Kent, and one or two local varieties of no especial merit are all bearing more or less fruit. Apricots are excellent all round here—numbers of trees are grown on the warm ends of cottages and other buildings in and around the villages of Thorpe Arch and Boston Spa, a few miles from us, and these are well fruited. Moorpark is the best variety for size and flavour, but is more apt to suffer from the sudden loss of its branches than Kaisha, St. Ambrose, and Hemskirk. A good holding loam about 2 feet thick resting on limestone seems to suit the Apricot as far as soil is concerned. Cherries are only partial with us; Morellos on pyramidal shaped trees growing in open borders are, as usual, loaded with fruit; on north walls the trees neither live so long nor bear fruit so well as the bush trees do. Currants of all sorts are and have been good crops, though to some extent injured by the long period of dry weather which we had up to the first week in July. The same remark applies to Gooseberries, only that these did not suffer so much from the drought as the Currants did; we always make it a rule in the winter to give our Gooseberry trees a good dressing of wood ashes or charred garden refuse, first cropping off the soil a few inches in depth round the base of the trees. Besides preventing the Gooseberry caterpillar from doing us any injury, we find that it much improves the

weight of the crops of fruit; Red Currants also are much benefited by the same material. Small fruits generally were good crops; Strawberries in particular, where soaked with sewage as soon as the flowering season was over, bore extra heavy crops; Héricart de Thury, Keen's Seedling, Newton Seedling, James Veitch, and President are our best croppers as a rule. Of new varieties that promise well I may mention The Countess and Unser Fritz, the latter a good late sort with some Frogmore Pine blood in it. Peaches and Nectarines are fair crops; Bellegarde, Royal George, Prince of Wales, and Red Nectarine are our best Peaches, and Violette Hâtive, Hunt's Tawny, and Lord Napier usually are the best cropping Nectarines. Pears are remarkably thin all round here, the only good varieties that have decent crops on them being Louise Bonne of Jersey and Beurré d'Amanlis. There are good crops of some of the smaller common Pears, but these are not worth increasing; therefore I need not mention their names, which are only local ones. Plums, too, are but thin as a whole; Victoria is the only variety that is carrying really good crops; there is, however, a smattering of fruit on Jefferson's, White Mirabile, and Orleans. Nuts are partial; in some places there are the heaviest crops of Walnuts seen for many years. The foliage of Pears and Apples is good generally. The present warm sunny weather should go a long way towards building up some sound fruit buds for next year's crop. Plums and Currants of sorts have been infested with aphides during all the early part of the season.—H. J. CLAYTON.

Thorpe Perrow, Bedale.—Apples are decidedly bad everywhere; here and there one may find a good Keswick Codlin or Lord Suffield, but that is all. Pears, too, are equally bad. Apricots in some places are good; in exposed places bad, and the trees dying. Peaches are good outside where grown. Bush fruits were abundant and good; even Gooseberries, though in some places they suffered terribly, especially Champagne sorts. Strawberries were good and fine, but much damaged by rain when ripening. Nuts all over this district are bad. Cherries were a fair crop, and mostly fine.

POTATO crops, more especially late sorts, promise to be good.—WILLIAM CULVERWELL.

Crewe Hall, Crewe.—In April and May we had bad weather, frosts at night, even up to the second week in June. Apples and Pears, therefore, can only be estimated at about half a crop on trees which have fruit on them, while many are fruitless. The sorts of Apples which are bearing best are Lord Suffield, Pott's Seedling, Irish Peach, Worcester Pearmain, Keswick Codlin, Minchal Crab, and one which seems to be a local sort called the Cottage Apple, while such sorts as Blenheim Orange, Reinette du Canada, Wareham Russet, and Mère de Ménage, with others, have little or no fruit on them. Pears bearing best consist of Beurré d'Amanlis, Louise Bonne, Duchesse d'Angoulême, Winter Nelis, Glou Morceau, and Jargonelle. On a wall of Plums, including Damsons, there are very few; those of the former which are bearing the best are Victoria, Kirke's, and Orleans, and these only where they have the shelter of a wall. Nuts and Filberts are a medium crop, and Peaches, Nectarines, and Apricots, although not very abundant, are better than they have been for several years past, *i.e.*, where protected when in blossom. Strawberry blooms were injured by frost and cold winds, and the crop was, therefore, below the average; Gooseberries the same; but Black and Red Currants and Raspberries were good crops in sheltered situations, but scarce in exposed places. Our soil is a rather light sandy loam, and the position sheltered from east and north winds.—WM. WHITAKER.

WALES.

Margam Park, Glamorganshire.—Here and hereabouts this is a very favourable fruit year; no crop has failed, and many are above the average. Apples are a very fair crop, especially

Keswick Codlin, Hawthornden, and King of the Pippins; some of the late kinds are very good too. Pears are not so plentiful. Plums are a capital crop, chiefly Victorias and Green Gages. Peaches, Nectarines, and Apricots are good average crops. Hale's Early Peach is ripe on the open wall now; it is a good early sort, a free grower, and heavy bearer. Morello Cherries are a fine crop, but none of the others are carrying heavy crops. Black, White, and Red Currants, all kinds of Gooseberries, Strawberries, and Raspberries have been very plentiful; the young growth, too, is free and clean. Little or no protection is given to anything in spring. Frost does not often occur to an injurious extent at blooming time, but high winds and rough weather frequently do much harm.—J. MUIR.

Dynevor Castle, Llandilo.—Peaches in this neighbourhood are an average crop; of Plums we have very few; Apples are about one-fourth of a crop, in some gardens none; Pears are about a fourth of a crop; all small fruits are good average crops; Gooseberries and Strawberries indeed have been unusually good.

POTATO disease has just made its appearance on some kinds.—J. TICEHURST.

Cardiff Castle.—The cold east winds which were prevalent in April and the beginning of May killed the flowers and withered up the tender growths on Pear trees to such an extent that they have scarcely yet recovered; Pears are therefore a failure in this district except on walls, and even there the crop is a partial one; Apples are a fair crop in some places, while in others they are a failure. The varieties that are bearing best here this year are Lord Suffield, Hawthornden, Echlinville Seedling, Lord Burghley, Cellini, Worcester Pearmain, and Cox's Orange Pippin; Echlinville, Lord Suffield, and Hawthornden are varieties that can always be relied on for a crop in almost any season; Plums are a failure here, with the exception of Victoria on walls; Peaches and Apricots are a failure also in the immediate district, while at Court-y-rala, some four miles distant, there are good crops of Peaches, Plums, and Apricots on the open walls; Cherries, consisting of Morellos, May Duke, and others, are good crops; of small fruits Gooseberries are almost a complete failure. The wood does not appear to have ripened well last year, and the buds in many instances turned black and failed to grow; Raspberries and Red, White, and Black Currants were plentiful; Strawberries were most abundant and good in quality. The varieties that succeed best here are President, Sir J. Paxton, Sir Harry, Vicomtesse Héricart de Thury, and Black Prince.—A. PETTIGREW.

Chirk Castle, Denbigh.—Fruit crops here and in the surrounding neighbourhood are generally good; indeed, I never remember having seen Peaches so good before as they are here this year; the trees are perfect as regards health, and are swelling off a heavy crop, though thinned severely, and but little protection has been used. In the case of Apricots, too, some of the young trees are remarkably well loaded; these also had scanty protection. They are likewise apparently free from gumming. Cherries are abundant on walls, especially May Duke and Morello. Pears are almost a failure. Plums are an average crop, although the blight was sadly against them in spring, the old Orleans bearing better than all others. Apples are a very heavy crop throughout, Hawthornden, Blenheim Orange, and Cellini being loaded to the ground. Black Prince Strawberries were very promising, but owing to the dry season in May and June they suffered somewhat severely, our soil being light and on the gravel. Later varieties are an average crop; President is the principal kind grown here. Raspberries are abundant and good. Black, Red, and White Currants excellent, the former unusually good in quality. Gooseberries are a grand crop, but small on old trees. Of Filberts we have none. Walnuts are plentiful.

POTATO crops both early and late are looking well. The earlier sorts which we are lifting for

use are excellent as regards quantity and quality, and as yet there is no disease.—J. OLDFIELD.

Castle Malgwyn, Pembrokeshire.—Fruit crops in this neighbourhood may be considered to be under average, with the exception of Peaches. The April frosts ruined our prospects, and, I believe, crippled the Apple blossom before it expanded. Cherries have been a fair crop; good dessert varieties of Plums are thin, but we have good crops of Victoria and Orleans. Apples, with the exception of Keswick Codlin, Dumelow's Seedling, Gravenstein, and Cox's Orange Pippin, are poor. Pears of all kinds are thin; Nuts average; Strawberries good, both in quantity and quality; bush fruits good. The soil varies in this neighbourhood from light on the high ground and very shallow to stiff in the valleys with clay subsoil of any depth; consequently a place can be found where most kinds of fruit trees will succeed. Apricots and Figs will not do on the low ground, but they do well on higher and lighter ground only a mile distant.

EARLY SORTS OF POTATOES have turned out well, and up to the 21st we had no signs of disease, but the damp, sultry weather of last week had induced it to show itself in all directions, though late varieties are yet looking well, especially Magnum Bonums.—HENRY HOWARD.

Brynkinalt, Ruabon.—Apricots well protected in spring with stout scrim canvas are carrying good crops, especially Moorpark, Large Early, and Hems Kirk, on which there are heavy crops. Peaches are bearing full crops, and Royal George, Noblesse, and Barrington heavy crops of fine fruit; Prince and Princess of Wales planted three years ago are remarkably well cropped and healthy. Nectarines, though bearing good crops, are less promising than either Apricots or Peaches; Early Rivers, Elruge, and Pitmaston Orange are our most satisfactory varieties. Plums are a very thin crop generally. Of Cherries the early dessert kinds are quite a failure, but Morellos are abundant. Pears are below the average, even on walls which have not failed before for many years. Pyramids, bush trees, and espaliers are carrying thin crops. Early kinds of Apples, such as Lord Suffield and Keswick, are bearing heavy crops, later kinds thin; Apples generally are below the average. Strawberries have been abundant and the fruit excellent. Of Gooseberries we have good average crops; early kinds run somewhat small, but later varieties are very good. Raspberries are heavily cropped, but the fruit is smaller than usual, owing to the long drought which we had in June and July. Of Red Currants we have good crops, but the fruit is small. White Currants are very good; Black thin hereabouts.—J. W. SILVER.

SCOTLAND.

B'air Drummond, Stirling.—Apples, Pears, and Plums are very scarce hereabouts; Cherries are a medium crop; Raspberries, Gooseberries, Strawberries, and Currants are abundant. The gardens here are well adapted for the growth of small fruits, being a heavy loam on sandy subsoil. Unfortunately, east winds strike us very much in spring—a circumstance greatly against our wall fruit.—JOHN KING.

Dunmore, Stirling.—Standard fruits, consisting of Apples, Pears, and Plums, are a failure, and the same may almost be said of wall fruits. Cherries are a little better. Gooseberries are an average crop and the quality good. Currants are a good crop, as are also Raspberries and Strawberries, and both have been good in quality. Soil here consists of strong, heavy, coarse land.

POTATO crops promise to be fairly good.—M. FITZGERALD.

Alloa Park.—Fruit crops hereabouts upon the whole are under the average. Small fruits are a fair crop, Strawberries being very plentiful. Apples, Pears, and Plums are very scarce. Cherries are a fair crop. Some of the most prolific are, amongst Apples: Cellini, Lord Suffield, Keswick Codlin, Stirling Castle, Ribston and Golden Pip-

pins; Pears: Marie Louise, Beurré Diel, Beurré d'Aremberg, and Citron des Carmes; Plums: Jefferson's, Washington, Golden Drop, and Green Gage. Our soil is stiff and clayey, and we are greatly exposed to east winds, which prove destructive in the spring months.—THOS. ORMISTON.

Dalkeith Park.—Apples and Pears here are generally a light crop, but of good quality. Plums and Cherries about an average crop, but rather severely thinned by insect attacks during the hot weather in June. Apricots are a moderate crop in some places; in others there are none. Peaches and Nectarines on open walls are looking better than they have done for many years, and where growing in a warm soil and subsoil are fine crops. Currants, Gooseberries, and Raspberries are plentiful and of good quality. Strawberries were a fine crop, but suffered much from heavy rains, which damaged the best of them.

VEGETABLE CROPS of every kind have done well, and no disease has yet appeared amongst Potatoes, which are looking very promising.—M. DUNN.

Tynninghame, East Lothian.—Apricot trees protected and unprotected alike set an amazing quantity of fruit, and the trees themselves are healthier than they have been for years. For the Apple supply dependence must this year be placed on the never-fail-me kinds, such as Echlinville, Warner's King, Northern Greening, Kentish Fillbasket, &c. Early dessert sorts, such as Irish Peach and Red Quarrenden, are carrying fair crops, but generally dessert kinds are deficient. Our best crops are on young trees. Pears are very thin, and also Plums, a few trees on a south-west aspect wall being the only ones here bearing a full crop. Cherries are also short. Peaches made a large set; Early Alexander promises to be an acquisition; it ripens here in the middle of July, while Princess Beatrice, another good wall sort, does not ripen until the middle of August. Small fruits are an enormous crop; unfortunately, the damp and rainy weather throughout July damaged them greatly. Where Gooseberries have been much pruned they are scarce; here we never prune and have plenty. Red and Black Currants, Raspberries, and Blackberries are all heavy crops.

POTATOES seem likely to be a heavy crop, and field crops never looked better; however, if the weather does not become dry disease will soon be among the garden crops.—R. P. BROTHERSTON.

Culzean, Ayrshire.—Our fruit crop here and in this locality is not good. Of Apples and Pears we have almost none; Plums are quite a failure, and of Cherries we have but half a crop; Black Currants are plentiful and very fine; Gooseberries and Strawberries heavy crops and good in quality; Red Currants and Raspberries scarce. The following varieties of fruit trees seem to do best hereabout, viz., Apples—Stirling Castle, Echlinville Seedling, McLean's Favourite, Lord Suffield, and Lord Grosvenor; Pears—Williams' Bon Chrétien, Hesse, and Beurré Superfin; Plums—Victoria and Kirke's Seedling; Strawberries—the best here are Garibaldi and Duke of Edinburgh. Our soil is of a heavy character.—DAVID MURRAY.

Galloway House, Wigtonshire.—The fruit crop in this district varies greatly. Where the gardens are protected by woods, as they are here, most kinds of small fruits are good even crops, but where much exposed, or in low, damp situations, they are almost a failure. Of Strawberries we have had a good average crop, and the fruit was of fine quality. The kinds upon which we mostly depend here are Keen's Seedling, Garibaldi, President, and Elton Pine, the last for a late crop; Duke of Edinburgh does well, and the fruit is large and highly coloured, but it is inferior in flavour to the sorts first named. We mulched well with stable litter before the dry weather set in, and with very good effect. Of Cherries we have an average crop. Peaches and Nectarines are almost a failure; the unripened state of the wood of last summer and the long continuance of cold weather in spring caused most of the fruit

to fall. Apricots are scanty; these do not succeed well in this county. The trees are healthy, and seldom lose any branches; they bloom freely and apparently set well, but from setting time until they commence to ripen there is a continual dropping of the fruit—a mishap which has caused most of the trees to be replaced with something more profitable. Plums are good on south or west walls, the best being Victoria, Kirke's, Lawson's Golden Gage, Coe's Golden Drop, and Washington. Damsons are a failure. Figs are an average crop; the most certain bearer here is the Brunswick; Castle Kennedy does well in the neighbourhood where well established, but is a shy fruiter in the case of young trees. Pears are a poor crop, the best being Jargonelle, Autumn Bergamot, Hesse, Beurré Diel, Beurré Rance, and Brown Beurré; Marie Louise and Louise Bonne of Jersey usually ripen here to perfection, but are a failure this year. Apples vary; some trees are loaded, while others are fruitless. Those carrying good crops are Manks and Keswick Codlins, Cellini, Warner's King, Hawthornden, Yorkshire Beauty, King of Pippins, and Galloway Pippin, the last a local variety, that never fails to bear a fair crop. Our soil is a heavy loam resting on clay, with good natural drainage.

EARLY POTATOES are good in quality, but rather small. The sorts grown are Myatt's, Veitch's, Gloucestershire Kidneys, and Schoolmaster. Field crops consist of Scotch Champion and Magnum Bonum, the former principally and extensively planted. No disease has as yet appeared amongst them.—JAS. DAY.

Terregles, Dumfries.—The cold sharp nights which we had in April proved too much for our fruit blossom, and therefore, with the exception of Currants, Gooseberries, and Strawberries, fruit crops are nearly a failure. Apples are thin in most gardens and fruit is swelling badly. The sorts that give the best result are Lord Suffield, Echlinville, Keswick Codlin, Tower of Glamis, Stirling Castle, Duchess of Oldenburg, Blenheim Orange, American Melon Apple, Manks Codlin, and Alfriston. Pears are a very uncertain crop in this district, and seldom swell their fruit to perfection. Williams' Bon Chrétien, Louise Bonne of Jersey, Marie Louise, Glon Morceau, Jargonelle, Beurré Diel, and Beurré Capiaumont are the only sorts bearing with us, and the fruits are few and far between. Plums are nearly a failure here, and also in most gardens that I have seen. We had a few trees on walls protected in spring with a double ply of old nets, and they have rewarded us with a full crop. The best are Victoria, Golden Drop, Kirke's Green Gage, and Jefferson. Cherries, with the exception of the Morello, are a failure; we had a fair set, but they all dropped through imperfect stoning. Strawberries have been an average crop; the dry weather which prevailed during June prevented a great many of the fruit from swelling, and the crop has been soon over. The best with us were Sir Joseph Paxton, Garibaldi, and President. Our soil is light and sandy, and the gardens are well protected all round with trees.—ALEX. CHALMERS.

Drumlanrig, Dumfries.—Strawberries, Raspberries, Currants, and Gooseberries have been good crops; Apples and Pears a total failure. Of the latter fruits we get a crop about every five or six years, and then the fruits are so small that they are scarcely worth gathering; consequently, it has been resolved not to replace any trees that give way in future.—D. THOMSON.

Bothwell Castle.—I can only give a favourable report as regards small fruits, including Strawberries, all of which are very good and most abundant. Cherries are about an average crop, especially Morellos; standards Plums have entirely failed here, and I am informed that is the case all along the Clyde from Lanark to Glasgow, and many trees of the Victoria Plum are now introduced into these orchards. Our wall Plums when in blossom were protected with scrim cloth, and we had a very good set of all the commoner kinds and for a time they looked very well, but the

lengthened continuance of cold east winds kept them stationary for about a month, and when more genial weather came the greater proportion got sickly and dropped off. The Pear crop is very deficient, and so is the Apple crop. In this locality the Stirling Castle Apple is decidedly the best and has proved so for years. Apricots and Peaches have been killed out at different times, and few are now grown here. The sorts of Apples that bear best here are Stirling Castle, Lord Suffield, Irish Peach, Keswick Codlin, Echlinville, Yorkshire Greening, Cellini, Winter Strawberry, Winter Pearmain, Yellow Ingestre, Ribston Pippin, Nonpareil, and Scarlet Nonpareil. I need not enumerate the sorts that do not bear well, for if the trees are at all healthy, they should be cut down and grafted with better kinds.—ANDREW TURNBULL.

Camperdown House, Dundee.—In this district fruit crops have been fairly good on the whole. Apricots are, however, under the average; Plums average; Cherries good; Peaches and Nectarines under the average; Apples very poor; Pears scarce; small fruits, including Strawberries, very good.—DAVID LOW.

Balcarres, Fifeshire.—Fruit crops in this district are much below the average. Apples, Pears, and Cherries are almost a total failure; even on walls they are very scarce. Of Apples, the varieties on which we have any fruit are Lord Suffield, Keswick Codlin, Irish Peach, and Warner's King; these about half a crop and the fruit individually small. Of Apricots and Peaches we have none, but they are very little grown outside here. Plums where protected are about half a crop; of Damsons we have none. All the varieties of Currants are a heavy crop and excellent in quality. Morello Cherries a good crop. Strawberries have been a heavy crop; late varieties very large and flavour good. Raspberries a fair crop. Of Gooseberries some sorts are a heavy crop, such as Whitesmith, Crown Bob, Ironmonger, Green Gage, and Glenton Green, but Sulphur and Warrington are a very poor crop; the trees are, however, making a great amount of wood. Of Walnuts we have none, but plenty of Nuts and Filberts.

EARLY POTATOES have been good, and late varieties are looking well in both garden and field; no accounts of disease as yet.—EDWARD TATE.

Dunrobin, Sutherland.—Apples, Pears, and Plums are a very poor crop here. Early Strawberries failed during the dry weather. Late kinds have stood well and have borne an average crop. Gooseberries are plentiful and good. Other small fruits, too, are abundant and of good quality.

POTATOES are a good crop, and excellent in quality.—D. MELVILLE.

Glamis Castle, Forfarshire.—With the exception of Strawberries and small fruit, and, in some cases, Plums, fruit crops in this district are under the average; but what crops there are, are of fine quality and large in size; of Apples, Juneating, Golden Pippin, Ribston Pippin, Cox's Orange Pippin, Braddick's Nonpareil, Northern Spy, Lord Suffield, White Codlin, Stirling Castle, Cellini, Hawthornden, Keswick Codlin, and Dumelow's Seedling are amongst our most satisfactory kinds; Pears are only grown on walls, and the most satisfactory are Jargonelle, Williams' Bon Chrétien, Louise Bonne of Jersey, Bergamot, Thompson's Marie Louise, Winter Nelis, and Vicar of Winkfield; of Plums, our best are Victoria, Goliath, Jefferson, Prince of Wales, Magnum Bonum, Green Gage, Orleans, and Pond's Seedling; Peaches and Apricots are not much grown out-of-doors here, but where protected they are good. Our soil consists of a light sharp loam, and most crops thrive well in it.—GEORGE JOHNSTON.

Fyvie Castle, Aberdeenshire.—Apples in general are poor hereabouts, except a few hardy sorts, such as Hawthornden, Keswick Codlin,

and Warner's King, but most of the trees were root-pruned in autumn, which in itself would have prevented them from bearing a full crop. Pears are also a poor crop, and what we have do not look as if they would come to much. Of Plums some of the trees are bearing extra well, such as Cox's Golden Drop, Early Prolific, and Denyer's Victoria; these have required to be thinned and are still heavy. Some sorts of Cherries are very good and others are almost a failure. Our Apricot trees not being very old, crops have never been large. Peaches are not grown outside, but under glass; they are excellent. Currants are in general a very good crop, and the Black, if not so numerous, are very large. Raspberries are very large and fine, particularly Carter's Prolific and Baumforth's Seedling. Gooseberries are a fair crop, but not so heavy as last year. Strawberries are particularly fine; Myatt's Seedling, which is just coming in, is a heavy crop. Late frosts which occurred in April were much against fruit trees which were then in blossom. Our soil, being a strong clay and the situation low, make us more subject to frost than on higher ground. I seldom give any protection.—R. FARQUHAR.

Dupplin Castle, Perth.—Apples are a scarce crop here; Lord Suffield, which in general carries a heavy crop, is this year scarcely carrying half a crop. Apricots are about an average crop; Cherries are under the average, with the exception of Morellos, which are a good crop; Plums are a thin crop; Pears almost a failure; Strawberries are an abundant crop. We have here a very heavy crop of Gooseberries, but they are not generally an abundant crop in the district; other small fruits are plentiful. A month ago fruit trees of all kinds were very much infested with insects, but the recent heavy rains have done much good in the way of cleansing them, and they are now looking more healthy.

POTATOES are looking well in the district. Although early varieties are small in tuber, they are of excellent quality, and I have not yet heard of any disease.—JOHN BROWNING.

IRELAND.

Shane's Castle, Antrim.—Most of the trees here are old, but taking the fruit crop on the whole it is good. Peaches are good, also early kinds of Pears and all the kinds of Apples. Plums are abundant, particularly Victoria and Orleans; the trees are mostly old, but have had young wood laid in every year, a system which speaks for itself, as the young shoots are carrying a good crop of fruit. All small fruits are plentiful, but owing to the dry weather which we have had, Strawberries and Raspberries are small. The soil here is a stiff loam, but well drained. I may add that none of the fruit trees were protected.—CHARLES WARWICK.

Carton, Maynooth.—We are particularly well favoured this season as regards fruit, having abundance of most kinds and superior in quality. Apples are a heavy crop. Apricots a fair crop, the best I have seen for these last seven years. Morello Cherries are a heavy crop; other varieties do not thrive here, but on such trees as there are of May Duke, Bigarreau, &c., there has been a fair crop. Of Currants, Red, White, and Black, we have a very heavy crop and very fine in quality; Gooseberries, too, are a very heavy crop. Of Nectarines we have none outdoors; Nuts promise to be plentiful; Peaches not grown outside here; of Pears we have a good crop. Plums on a south-west wall, consisting of Victorias, Magnum Bonums, Black Gage, Golden Drop, &c., are a wonderful crop, the weight of fruit in some places pulling the branches off the wall. Raspberries are a light crop. Strawberries have been a heavy crop and good in quality. The dry weather improved James Veitch this year, the fruit of which was very large and of fairly good flavour, though for forcing, preserving, or any purpose Vicomtesse Héricart de Thury I find to be the most useful and reliable.

EARLY POTATOES are very fine, and late, too, look well. No disease.—E. KNOWLDIN.

Charleville Forest, Tullamore.—Apples here with the exception of a few young trees are a failure; Pears are not half a crop, they bloomed too early and were killed; Cherries are a good crop and the fruit fine, especially on walls and some small standards; Plums of all sorts on walls of several aspects are all good and a heavy crop, and a few pyramids are also fairly well cropped; Apricots on a south wall 150 yards long, nearly all covered with trees, only half a crop, except Orange and Hemskirk, which are pretty good; we protected our Apricots with old netting and straw ropes, but the majority of the blossoms dropped. Strawberries were a heavy crop; Gooseberries a very heavy crop; Black, Red, and White Currants the same; and Raspberries are fairly good; they would have been heavy only for want of rain when swelling. To sum up—bush fruits are excellent heavy, and clean, excepting Raspberries and Strawberries, which were and are still bearing a heavy crop of clean, fine fruit. In the orchards outside the garden walls here the Apples are a failure, which I never saw before for nearly thirty years; Pears are very scarce, not half a crop. Peaches and Nectarines will not do here: after the third and fourth year after planting they blister, mildew, and die; under glass they do well. Our soil is light loam on the limestone, dry, and not over 2 feet deep. We are rather too much exposed to the east and suffer in the spring from that cause.—J. ROBERTS.

Kylemore Castle, Galway.—The fruit crop in this district is above the average, but between the heavy rainfall, the want of sunshine, and the poor boggy character of the soil, the west of Ireland cannot be said to be very favourable for hardy fruit growing out-of-doors. We have a good crop of Apples on free-bearing varieties, such as Echlinville, Warner's King, Keswick Codlin, Stirling Castle, Lord Suffield, Wellington, Alfriston, Duchess of Oldenburg, Hawthornden, Cellini, Northern Greening, Golden Pippin, King of the Pippins, and Cox's Orange. The only varieties of Pears on which there is a crop are Marie Louise, Louise Bonne of Jersey, Beurré Diel, Hessel, Brown Beurré, Catillac, and Napoleon. Peaches, Nectarines, and Apricots are very thin crops. Cherries, Currants, Gooseberries, Raspberries, and Strawberries are very heavy crops, and the fruit large in size and fine in quality. Plums are also a heavy crop, but very small. There is a fine crop of Nuts in the woods about here, and it is to be hoped we will get a good autumn to ripen them.—JOHN MCKINNON.

Palace Gardens, Armagh.—The fruit crops in this district are much under the average. Small fruits, viz., Strawberries, Raspberries, Gooseberries, Red and Black Currants, have been very heavy crops and very fine, considering the dry weather which we have had; stone fruits are very scarce; Cherries and Plums not half a crop; Apricots and Peaches are not grown here outside, but they have been good under glass; Apples are not half a crop; Pears very bad, only one sort, Napoleon, having anything like a crop on it. This sort always crops better in this district than any other. The garden here is not good for fruit trees; the soil is heavy on a clay subsoil and badly drained, but it just suited Strawberries this dry warm season.—T. SHEASBY.

Castle Upton, Templepatrick.—The following Pears are carrying more or less good crops, viz., Hessel, Louise Bonne, Easter Beurré, Doyenné d'Été, Seckle, Knight's Monarch, Uvedale's St. Germain, Comte de Lamy, and Green Chisel, all on walls, excepting the first named. I find Louise Bonne, Passe Colmar, General Todleben, and Williams' Bon Chrétien will not do here as bush fruit. Apples on the whole are much better than Pears. The following are carrying good and medium crops on walls, viz., Ribston, Nelson's Glory, Allen's Everlasting, Golden Pippin, Dutch Codlin, Alfriston, King of the Pippins, Cellini, Duchess of Oldenburg, White Pheasant, and Grenadier. On bushes or standards the best are

Lord Derby, Emperor Alexander, Carlisle Codlin, King of the Pippins, Golden Russet, Keswick Codlin, Northern Greening, London Pippin, Kerry Pippin, Scarlet Nonpareil, and Keen's Seedling of the North, a kind which rarely fails to carry a good crop of fruit; Wyken Pippin, and Yellow Ingestre. I may remark, too, that the Paradise stock does not seem to answer in this garden. Plums generally are a fair crop; Coe's Golden Drop, Orleans, Magnum Bonum, Jefferson's, Belgian Purple, Nectarine, and Victoria, all on walls, are our best representatives this year. Of Cherries we have a very poor crop; The Duke, White Heart, and Bigarreau on a south aspect are the best cropped. Of Morellos we have scarcely any. Bloom was most abundant on all the Cherries, and there was also a good full set of fruit, but they dropped wholesale, perhaps through weakness of embryo fruit and the drought, which took them immediately after setting. Strawberries have been excellent; likewise Raspberries, Gooseberries, and Red Currants. The Black Currant crop was very much destroyed by a very heavy hail shower which we had on the 19th of May, and birds also are more than usually destructive. I may remark, however, that the fruit left became extra fine, which compensated somewhat for their diminished number.—L. KEVAN.

Fota Island, Cork.—The rainfall in the south of Ireland is generally very great, but this season it is very much under the average, and consequently many things suffered much from drought, and fruit especially. Strawberries and Raspberries, although of good quality, had a very short season; Plums on walls are also falling prematurely through want of rain. Apples are a light crop; Lord Suffield, Pott's Seedling, Golden Noble, Hawthornden, Hambledon Deux Ans, Tower of Glamis, and Glamis Castle are among our best varieties. Pears are a very thin crop; we have, however, fair crops on the following, which are our best kinds for this climate, viz.: Jargonelle, Marie Louise, Beurré Diel, Beurré d'Amanlis, Glou Morceau, Beurré Hardy, Duchesse d'Angoulême, Williams' Bon Chrétien, Comte de Lam, and Souvenir du Congrès. Plums are a very good crop; Victoria, Kirke's, Coe's Golden Drop, Orleans, Magnum Bonum, Golden Orleans, Transparent Gage, and Jefferson are our best kinds. Cherries have been a fair crop, but many fell in consequence of the drought. Black Currants have never been better. Gooseberries in some districts have been a very heavy crop and of good quality. Strawberries good; Sir Joseph Paxton, Maréchal MacMahon, President, and Keen's Seedling are about the best in this district. Peaches, Nectarines, and Apricots are hardly worth growing without glass protection, as the wood hardly ever ripens except the autumn rains are thrown off. The climate being so mild and moist, the trees keep growing through the whole winter. Both old and new leaves may be seen upon the trees at the same time.—W. OSBORNE.

Besborough, Cork.—Apples are good hereabouts. The kinds that do best are Irish Peach, which crops well on standards if not too much pruned; Kerry Pippin, our best summer Apple and one which bears well, best eaten from the tree; Cornish Aromatic, Nonpareil, a great favourite in this neighbourhood; Bronzed Pippin, a market variety here and one which grows to a large size and crops well; Catshead bears well on old orchard trees; Eve Apple, Golden Harvey, Hawthornden, a good and sound bearer; Sturmer Pippin was best late dessert kind; Wyken Pippin, Northern Greening, best late culinary kind; Ribston Pippin, Lord Suffield, a great bearer and sure, the best of its class in its season. Pears are under the average. The kinds doing best with us are Citron des Carmes, a good reliable kind and our earliest; Doyenné d'Été, Jargonelle, the best of ours are worked on Hampden's Bergamot; Bon Chrétien bears well on standards, generally a good bearer, but this year fruitless; Beurré d'Amanlis, a great bearer; Flemish Beauty bears well, but cracks; Napoleon bears well and a good kind; Fondante d'Automne, good on standards; Beurré de Capiaumont, Beurré Hardy, one

of our best Pears and which bears well on standards; Comte de Lam, our best dessert Pear; Louise Bonne of Jersey, a sure bearer on standards; Seckle, Aston Town bears well in orchard; Mar. de la Cour, a great favourite here; Chaumontel bears well, fruit large; Beurré Rance bears regularly on old trees; Swan's Egg, Beurré Superfin, Hazel, bear well on standards; Bishop's Thumb, a heavy bearer in orchard; Vicar of Winkfield bears well on standards. Apricots do not succeed out-of-doors in this locality. Cherries excellent; they consist of Early Rivers on walls, May Duke, Morello, and Bigarreau; the latter bears well on bushes. Currants are heavy crops; Early Castle we find to be a grand bearer, and one on which the fruits hang late. Gooseberries are a heavy crop. Peaches and Nectarines not grown out-of-doors here. Plums are under the average; Victoria bears every year; Early Orleans does well on bushes; Golden Esperen, Jefferson's, a good kind here; Blue Impératrice bears well on a north wall; Green Gage bears well on old bush trees. Raspberries, medium crop; the best are Red Antwerp, Fastolf (largely grown for market), and October Red. Strawberries are a very heavy crop and good in quality; Black Prince is a good kind, though not largely grown, and good in quality; Keen's Seedling is the earliest market variety and largely grown; Vicomtesse Héricart de Thury is a grand sort on this light land, and one of the best for preserving; President is largely grown for late market work; Sir J. Paxton is a good bearer, but makes too much foliage; Elton is the latest here in private gardens. Cob Nuts, Filberts, and Walnuts are light crops. Our soil is light resting on limestone, which is near the surface; our garden lies low, and, therefore, we are visited in spring with sharp frosts. Our winters are generally mild.—CHAS. BENNETT.

Woodstock Park, Inistigo.—Owing to easterly winds and late spring frosts, the fruit crop in this district is, on the whole, much under the average. Apples and Pears are almost a failure. Amongst Apples the only sorts bearing fair crops are Lord Suffield, Stirling Castle, Echlinville Seedling, and Warner's King; Victoria Plums are abundant; other sorts scarce; Cherries, Strawberries, and small fruits in general are plentiful and excellent in quality.

POTATOES are remarkably fine this year, and not a trace of disease is to be seen.—WM. GRAY.

Straffan House, Kildare.—The fruit crop here is much under the average. Our soil is cold and heavy, resting on a colder subsoil of a marly character, and holds water like a basin; the soil soon becomes as if it was puddled; water indeed will lie on the top of drains only 15 inches deep. In winter time we can find water anywhere at 2 feet deep; hence we suffer much from spring frost; the situation being very low on the banks of the Liffey, we get sharp frost up till first week in June. Of Apricots we have none. Plums good on the following, viz., Early July Green Gage, Transparent Gage, Angelina Burdett, Coe's Golden Drop, Early Prolific (Rivers'), Dennison's Superb, Victoria; other kinds are a failure. On Cherries, May Duke and Morello, we have average crops. Of Peaches and Nectarines we have very few. Apples are under the average, but good; the best are Cox's Orange Pippin, Irish Peach, Kerry Pippin, King of Pippins, Golden Reinette, Blenheim Pippin, Cellini, Echlinville Pippin, Hawthornden, Lord Suffield, Lord Derby, and Yorkshire Greening; other kinds are failures. Of Pears we have a fair sprinkling of the following: Beurré Rance, Glou Morceau, Marie Louise, Ne plus Meuris, Passe Colmar, Thompson's, and Winter Nelis. On standards we have none. Strawberries have been heavy crops on south borders, but all in open garden were killed by frost; President, Sir J. Paxton, Vicomtesse Héricart de Thury, and President Delacour are the only kinds that do well here. Currants of all kinds are good; Gooseberries half a crop, killed by spring frost; Raspberries very poor, suffered from frost and the long spell of dry weather which we have had.—F. BEDFORD.

GARDEN FLORA.

PLATE 453.

GRAPE HYACINTHS.*

Now, when the culture of spring flowers is on the increase, and when people are getting tired of glaring colours, attention may well be directed to Grape Hyacinths, of which the annexed plate represents a charming group. So handsome, indeed, are they when tastefully massed, and so floriferous, that their culture is being taken up even by market growers, and as their flower-spikes are known to keep fresh for a considerable time after being cut, we may soon expect to find them favourites in Covent Garden early in the season. For bare, flat, or exposed situations in the wild garden, under the shade of large trees, where even Ivy has a difficulty in growing, and for bordering clumps of Evergreens, &c., nothing can exceed their usefulness. In ordinary borders they will be found to be quite at home, and the richer and freer the soil the more rapid will be their increase accomplished by means of offsets from the bulbs. They ripen seed freely, too, and therefore the



Muscari botryoides.

stock may also be increased in that way, thus obviating the necessity of lifting or disturbing established bulbs. Autumn, say from October onwards, may be considered the planting season, but the later this is delayed the less chance will there be of failure. Apart from the varied colours of the flowers, the difficulty of distinguishing the one from the other specifically without a proper classification is very great, especially to the unpractised eye; but this may easily be overcome by the use of Mr. Baker's "Key to the Genus," of which a modification is here given, confined to the species known to be in general cultivation at the present time.

GROUP 1.—Having the perianth of the lower flowers obovoid-globose, longer than they are broad, and always bright blue; leaves strap shaped, half erect.—*Muscari botryoides*, *M. Lelii*, *M. Heldreichii*, *M. lingulatum*. In this group *M. botryoides* and *M. Heldreichii* are the two most frequently found in cultivation, and the most useful from a gardening point of view. *M. lingulatum*, lately introduced, has not been long enough under culture to determine its merits. *M. botryoides*, the white variety of which may be found on the annexed plate, although amongst the first in-

* Drawn in Mr. Ware's nursery, Tottenham, April 15, 1881.



roduced, has still held its own as a welcome denizen of our spring garden; few bulbs can be cultivated with greater ease, and few if any surpass it in the profusion and loveliness of its flowers. There are few corners in a garden that could not be brightened up by planting them both with botryoides and its white variety, and they are also especially well adapted for edgings to shrubby borders where their agreeable blue and white flowers have a charming appearance. They are



Muscari moschatum.

also among the earliest to flower, which takes place the latter end of March or beginning of April. The flower-heads, seldom less than an inch long, light blue or pure white, consist of prettily shaped flowers individually. The leaves are about a foot long, strap shaped, and slightly glaucous, and easily distinguished from all the others. The peculiar variety called pallidum is a very desirable plant owing to the uncommon shade of blue of its flowers. They are natives of the southern parts of Europe. *M. Heldreichi*, an exceedingly handsome species, makes a good companion to the above. Its leaves are narrower and more erect, and the flower heads are also larger and closer together, conical shaped, and freely produced. For growing in pots this a useful kind, and as it will stand a little forcing it might be had in flower earlier than the Siberian Squill. It is a native of Greece, and flowers in April and May. A much stronger habited variety under the name of pulchellum may be found in gardens. It has larger



Muscari comosum mo:strosium.

flower-heads and pretty glaucous green-tinted leaves, a trifle broader than those of *Heldreichi*.

GROUP 2.—Having the lower flowers obovoid-oblong and about half as long as broad. This section is divided into vernal and autumnal. To the latter belongs *M. parviflorum*; to the former *M. paradoxum*, *M. armeniacum*, and *Szovitzianum*, none of the others being in general cultivation. *M. paradoxum*, a handsome species sent out some time ago by Dr. Regel, is a very interesting kind

owing to its taking a position about midway between *Bellevalia* and *Botryanthus*. The leaves are about a foot long, a trifle higher than the flower-heads, nearly an inch broad, and deeply ribbed. The flowers are densely packed in close conical heads about 2 inches long, blue-black, very beautiful, and slightly fragrant. It is a native of the Caucasus, and flowers from the middle until the end of April. *M. armeniacum*, a narrow-leaved, very free-flowering plant, is in general appearance not unlike *M. compactum*, which belongs to the next group, and which has quite a different shaped flower. Its leaves are about a foot long, narrow, glaucous green, ribbed, and gracefully curved. This is the latest to flower of all the species of *Muscari*, extending in favourable seasons well into June. Its stalks are generally about half a foot high, heads about 2 inches long, closely set and of a dark or livid purple or lilac colour, with pretty slightly recurved white teeth, giving it a very charming appearance. *M. Szovitzianum* is one of the handsomest and freest flowering species yet introduced. Its leaves are narrow, nearly round, deeply channelled on the outside, and hardly glaucous. The flowers, which are of a beautiful light blue or lilac, rise well above the leaves. They have white recurved teeth, are collected in a compact head from 1 inch to 2 inches long, and are very fragrant; each bulb produces three or four stalks in March and April. It is a native of Persia, &c., and very useful for pot culture.

GROUP 3.—Perianth of lower flowers obovoid, cylindrical, and nearly twice as long as broad. Nearly the whole of this group, which contains most of our common garden species, are in cultivation at the present time; they include *M. commutatum*, *M. compactum*, *M. neglectum*, *concinnum*, and *racemosum*. *M. neglectum* is certainly the most handsome of the dark blue-flowered section. It has a distinct and graceful habit, may be rapidly increased, may almost be left anywhere to take care of itself, and lasts a long time in good condition when cut. Its bulbs are large for the size of the flower, each producing many flower-heads 2 inches to 3 inches long. They consist of nearly fifty flowers set closely together, and are nearly twice as large individually as those of *M. botryoides*. They are of a beautiful dark blue-black, always covered with a fine glaucous bloom, and furnished with very pretty recurved white teeth; leaves flat and dark green. It is a native of Italy, &c., and flowers in April and May. *M. concinnum*, which also goes under the name of *M. contaminatum*, is likewise a handsome species, and well deserves attention. It is nearly related to *M. racemosum*, an old garden favourite, but has much smaller flowers, and bright instead of dark blue. The leaves, which are narrow, rounded, and half a foot long, overtop the handsome-shaped flower-heads, which seldom reach more than 4 inches in height. They are very glaucous and deeply ribbed. The flowers are very fragrant. Native country unknown. It was put into cultivation by Mr. Peter Barr.

K.

Fine Sunflowers.—The Postlethwaites, as *Punch* calls them, of the æsthetic school deserve our thanks for having induced cultivators to take up the Sunflower and improve it. At one time Sunflowers were very tall—6 feet or 8 feet—and produced an immense disc or centre of seeds surrounded by a narrow fringe of petals. Now we have a much dwarfer race, the flowers of which have dark or light centres, 3 inches or 4 inches in diameter only, instead of 9 inches, with a corona

of rich yellow petals, 3 inches or 4 inches wide, and are simply glorious. We have a bed of these at present in full flower which has attracted much notice. This variety is only coming into cultivation.

SEASONABLE WORK.

FLOWER GARDEN.

HERBACEOUS PLANTS in mixed borders have this season well repaid all the attention bestowed on them, which has simply been a general look over weekly to see to the ties, picking off bad blossoms and keeping the borders free from weeds, and strong growers mulched. At the present time *Phloxes* are making a grand show. The double *Geums*, *Campanulas*, *Potentillas*, and the perennial *Sunflower* are also very fine, and in order to keep them in that state we now have to water them twice a week. Wherever there is a blank place, seedling *Aquilegias*, *Canterbury Bells*, *Brompton Stocks*, and other perennials will be planted in it the first showery day, and meanwhile the places will be prepared by digging them with a hand-fork and manuring them with guano or some other fertiliser. If cuttings can be had without marring the appearance of the beds, *Pelargoniums* ought now to be propagated; the handiest way is to strike them in the open border. Any kind of light soil will do, provided the cuttings are well firmed in it. To plant them in boxes at once will save labour, but my experience is that they never do so well as those struck in the open border and potted up about the middle of September. A hotbed should be made up for the striking of *Ageratums*, *Petunias*, *Lobelias*, *Verbenas*, *Mesembryanthemums*, *Coleus*, *Iresines*, and *Alternantheras*; only sufficient of these should be propagated to insure a good supply of cuttings in the spring, as spring-struck plants grow away much more freely than those struck in autumn. *Violas*, *Pansies*, *Pentstemons*, *Antirrhinums*, and all other hardy perennials usually propagated from cuttings may be put in now; a north or shady border upon sandy soil and handlights or frames are all that is needed to insure a successful strike. General work will consist in watering shrubs, trees, and *Roses* moved in the spring, and the renewing of the mulching over their roots; also in picking off decayed flowers and foliage from the flower beds, and pegging, pinching, and tying up. The completion of shrub cutting, also the picking of seed vessels off choice *Rhododendrons* and *Azaleas*, at the same time tearing off suckers or shoots that spring from the stock, will now also need attention, as well as hoeing shrubberies, clipping verges, and weeding walks if neatness is to be maintained, and it ought, for without it a garden can yield little real pleasure.

FLORAL DECORATIONS.

THOSE who may have grown any of the following kinds of ornamental Grasses should secure a good quantity for future use whilst they are in perfection. They will not be nearly so fine if allowed to remain on the plant after they are fully developed. A heavy downpour of rain will also spoil their beauty. Of the *Agrostis* we grow *A. pulchella* and *nebulosa*. The former is very pretty and useful for working into button-hole bouquets; the latter is most useful for floral decorations in general. *Briza gracilis* and *maxima* are both valuable kinds, the latter especially so for floral decorations of a somewhat bold character. *Lagurus ovatus* is always useful, especially when associated with Liliaceous subjects. It is very soon spoiled by rain, and should therefore be secured on the first favourable opportunity. *Hordeum jubatum* is another beautiful Grass that ought to be grown in the most limited collections. It thrives best in a moist situation, quickly feeling the effects of drought. *Paspalum elegans* is another good and distinct sort. We shall secure our winter stock of all these in a few days. After this is done each kind will be loosely arranged in glass bottles, such as have been used for pickles, &c. We then place them in a spare airy room not

too near the light; no water of course is given them. In this manner we find them to keep their colour fairly well. Another very useful late kind of Grass is *Eragrostis elegans*; this is just beginning to unfold its spikes, and in the form of successive crops will continue to do good service till the early frosts spoil their colour. All of these and several other distinct kinds will be found valuable where extensive decorations are carried out during the winter months. Those who have not room to grow these can secure many pretty sorts from the fields, woods, and hedges, all of which will help to economise the use of Fern in winter, when there is frequently none too much to spare. Of annuals easily raised from seed, the following will now do good service in the shape of cut flowers, viz., *Campanula Lorei* and *alba*, both extremely pretty when arranged with some spikes of the *Agrostis nebulosa* and *Sweet Sultan*; the yellow kind can be used in association with these also, likewise the various colours of the *Cornflowers*. *Salvia patens* is valuable for its colour; a spike or two used with white *Sweet Pea* will give a pleasing effect. For the want of anything better or closer to hand, a few *Carrot* leaves that are assuming their autumnal tints will be found not to be out of place. The different varieties of *Phlox Drummondii* are also extremely pretty, especially in small arrangements.

PROPAGATING.

No time must now be lost in putting in cuttings of all kinds of stove plants required, for if longer delayed the wood becomes too hard to root readily. We refer to such subjects as *Crotons*, *Ixoras*, *Dipladenias*, and *Francisceas*. *Ixoras*, we find, root best when a large proportion of peat is used in the soil, say two parts peat to one each of loam and sand. The whole must be sifted fine and pressed down firmly, leaving just enough space for a layer of sand on the top. Of course, as good drainage is necessary, the pots will need to be filled within 2 inches of the top with broken crocks. Fern spores sown in spring will need attention in the way of pricking off, the aim being to get them as large as possible before winter. Of *Oleanders* there are now many beautiful varieties, the whole of which may be readily struck from cuttings during the summer months. The two principal points to be observed are first, not allowing the cuttings to become too hard before taking them off, and secondly, giving them plenty of water at all times; indeed they will emit roots freely in water alone, or, better still, in water-tight pans of wet sand, but in either of these cases care is necessary in potting them off, as the roots are so brittle that they are easily broken. Such being the case, the better way is to put them in pots of sandy soil, and keep them close and moist till rooted. Another common subject, but one that many fail to strike satisfactorily, is the *Lemon-scented Verbena* (*Aloysia citriodora*); the failures in this case generally result from using wood in too matured a condition. The best way is to take the succulent growths in the spring as soon as they are long enough, and treat them just as one would *Fuchsias*, *Verbenas*, and similar plants, when, with the exception of requiring a little additional care to guard against damp, they root as readily as the others just mentioned. Later in the summer, if cuttings are required, the better way is to put a plant in a close, warm house, when it will at once start afresh, and when of sufficient size use the young shoots as cuttings.

INDOOR PLANTS.

BOUGAINVILLEA GLABRA.—All the weak shoots at this time should be cut out of specimens of this plant that are grown in pots and have finished blooming, for, as these do not in the least promote the formation of fresh flowering wood, it is not well to allow any overcrowding of weak growths, as they are merely a strain on the energies of the plants for no purpose, for this *Bougainvillea* will only bloom profusely on shoots that have attained some strength. If the balls are very full of roots it will be found good practice to put about 1 inch

of well-rotted manure on the surface, as the addition of new material of this description by encouraging the formation of fresh feeding fibres is a great assistance to the plants. Managed as above advised, this *Bougainvillea* can be had in bloom again about the end of September, and there will still be time enough after the flowering is over to get it sufficiently hardened off before the end of the year.

TILLANDSIA LINDENI.—This beautiful blue-flowered *Bromeliad* is most effective for decoration, and it looks best in the form of single crowns grown in little pots, in which size it can be dotted about better than when larger. It throws out suckers when its blooming is over, and when these have got big enough they ought to be taken off, removing a few of their lower leaves and putting them singly in small pots, being mindful not to over-water them till they have rooted, after which they will need more root space. The plants will push a second lot of suckers after the first have been removed; these in their turn when they have attained a proper size can be treated like those first taken off. Sandy peat answers well for it, draining the pots well and giving it a position where it will get a fair amount of light.

IPOMEEA HORSFALLIÆ.—From this time, on during the autumn, this plant should have every encouragement to make growth, for the quantity of flower that may be looked for will be regulated by the strength and number of the shoots. It is not a long, rampant grower, nor likely to shade anything under it over much, and on this account where space is limited it may with advantage be trained over a path. In a position of this kind attention to training can easily be given.

ARISTOLOCHIAS.—These plants likewise are well suited for occupying a place over a path, and nowhere else are their remarkable flowers seen to better advantage. It is not yet too late to put in cuttings; any of the larger species will bloom freely next year. Young examples will in many cases be found better to manage than old plants, as these require a good deal of cutting back to prevent their getting beyond bounds. The medium sized side shoots that generally are to be met with at the lower part of the stem will strike readily if taken off with a heel, put in sand covered with a bell-glass, and kept in a brisk heat. When they have rooted they will need moving into 6-inch pots, and through the winter ought to be kept growing gently.

GARDENIAS.—Where a sufficient stock of these are grown, and they are managed in a way to flower in succession, there is no difficulty in having a supply of their fragrant blossoms for many months. If they are wanted over as long a season as possible, in addition to the older larger stock, it is a good plan to each spring propagate some. Young plants of this year's striking intended to flower in winter must have all requisite attention; they should at once receive a shift into the pots they are to bloom in; by doing this now they will have time to establish themselves well before the short days. The size of the pots ought to be regulated by the strength and size of the plants; from 8 inches to 11 inches or 12 inches will be big enough.

GESNERAS.—The winter-blooming *G. exoniensis* must not be neglected, nor let to be overshadowed by other plants, or it will get drawn up, and unless the growth is stout and short it is useless to expect a satisfactory amount of bloom. The *Donckelaari* and *Cooperi* section will flower a second time if encouraged by being kept in a good light position and supplied with manure water.

TOXICOPHLEA THUNBERGI.—Plants the flowers of which have a pleasing odour are always acceptable, and, if for no other reason than its perfume, this *Toxicophlea* is worthy of a place; but in addition to this it has a compact habit, and in growth is not unlike a *Gardenia*. It blooms from the axils of the leaves and also from the points of the shoots; a few of its flowers, which are white in colour and borne freely in corymbs, are sufficient to scent a house. It blooms well in a small state, and does not want a great amount of root room.

FERNS.—Such kinds as *Adiantum cuneatum* and *Pteris serrulata*, which are so serviceable for using in a cut state, are best for this purpose when grown in comparatively small pots. If they have been well cared for, they will have made good growth, and should now be put where the requisite hardening can take place before winter. On this being properly done to a great extent depends the use they will be. Let them have a position where they will receive sufficient air and plenty of light, but if the atmosphere of the house they have been grown in has been moist, and a good deal of shade employed, do not let them have too much sun, or the colour of the fronds will be injured; they will also suffer similarly if they go short of water. Tree Ferns will by this time have got the main lot of fronds that they made in spring matured, and it is a good plan to take advantage of this and give a good cleaning to those that are infested with scale. It will generally be confined to the older fronds; the largest insects ought to be removed with brush and sponge, laying the plants down on their sides afterwards, where this can be done, and dipping the affected parts in a solution of some or other of the various insecticides. Fowler's, at about five ounces to the gallon, will be found effectual in destroying most of the young insects, and by this means a good deal of labour is saved compared with the slower process of hand cleaning.

BERRY-BEARING SOLANUMS.—When the weather is dry any of these that are planted out must be well attended to with water, so as to enable them to keep in a healthy condition. It will also be well to see if there is any red spider on them, for though they are not so liable to be attacked by it when planted out as when grown in pots, still sometimes it will make its appearance, and soon do much harm to the leaves if not destroyed. A good dressing with Gishurst used at the rate of 2 ounces to the gallon of water will generally free them from this pest. Plants in pots affected by the insect can be dipped in this mixture.

MIGNONETTE.—Plants sown early to bloom in pots must not be allowed to get cramped at the roots. The size of pots necessary will, as a matter of course, be regulated by the strength of the plants and the size they are wanted to attain. Keep them tied in whatever shape is required. They look much the best when the form chosen is a more natural one than the pointed stiff style often seen. Plenty of air and abundance of light are essential to prevent their becoming drawn and weak, a condition that cannot be remedied if once they get into it. To keep the foliage green they must never be allowed to want for water.

FRUIT.

PEACH HOUSES.—Where it is the practice to start the early houses in November, the period extending over August and September is perhaps the best for exposing the trees to the full influence of the atmosphere, as the buds are well advanced and summer showers have a most beneficial effect on the foliage and surface roots. Another advantage which should not be lost sight of is the efficient way in which the lights can be thoroughly dried, repaired, and painted at times when outside work cannot be carried on. If any of the trees require an additional supply of soil or partial lifting, now is a good time to get the work done, as the roots will at once commence working in the new compost, and the trees will be in a fit state for starting at the usual time, and capable of carrying a full crop of fruit next year. Successful growers of Peaches know that a strong calcareous soil is indispensable, and where this cannot be obtained, light loams may be improved by the addition of marl and old lime rubble, which must be thoroughly mixed together when dry, and made as firm and resisting as possible by good solid ramming when the borders are being formed. If midseason houses cannot be stripped, all the ventilators must be left open; good daily syringing and an occasional washing with the garden engine will also be necessary; and last, but not least, borders from which that best of all elements, rain

water, is excluded must be well mulched and thoroughly drenched with the hose, until the flower buds are made up and ripe, when less water will be needed, but on no account must Peaches at any time become what is termed dry at the roots. Where late houses have been systematically retarded through every stage, midseason kinds will be approaching ripeness, while late varieties, under liberal ventilation, will carry on the supply after many of the wall trees are over. The fruit in wall cases will now require full exposure to the influence of sun and light by being raised up on small pieces of lath placed on the trellis. As the Peaches are elevated, apex upwards, to insure colour, stop all strong growths and tie them down to the trellis, otherwise they will rob the fruit, and most likely upset the balance of the trees. Keep them well syringed until the fruit begins to soften for ripening. Give plenty of water to the roots, and expose or shut up so as to avoid having a glut of ripe fruit at any one time, particularly where there is a steady family demand.

FIGS.—When the flush of the second crop has been taken from the early forced trees encourage them to go gradually to a state of rest by running down all the lights, or by stripping the roof altogether; but guard against starving them into this condition by suddenly withholding water from the roots, or by leaving off the daily bath from the syringe. If the weather continues fine, a great number of Figs of most delicious flavour will ripen after the house is thrown open; but where a good dish of fruit is indispensable in making up an early spring dessert, the strongest and best of trees should not be allowed to carry more than two crops in one season, and all half-swelled fruits should be rubbed off when the lights are removed from the house. Let the second crop of fruit in the second house be well thinned to ensure fair size, and feed copiously with good warm liquid and guano water as often as the roots can take it. Syringe well twice a day, close with sun heat, and carry on incessant war with the numerous insects which so often become troublesome about this time. The worst is mealy bug, then follows scale and red spider, which may be kept in check by good syringing and occasional sponging, and bug speedily melts away under a dressing of methylated spirits applied with a small brush if taken in hand before it extends from the shoots to the leaves and fruit. Where there is a constant demand for good Figs, and old established trees occupy snug corners in the kitchen or fruit garden, such kinds as Brown Turkey, White Marseilles, and all the Ischias will soon pay for the cost of a glass covering, which, under judicious management, will give a supply of ripe fruit from the end of July until the middle or end of October, and that in good seasons without the aid of fire heat; but a heating apparatus should always be provided, as such structures are invaluable storehouses through the winter. To keep the trees in moderate growth and fruitful it is necessary to lift occasionally and replant in a mixture of good loam and lime rubble, resting on ample drainage for carrying off water, of which Fig trees under glass require a very liberal supply. Pruning or thinning should always be performed with a liberal hand before the trees are nailed to the wall in spring, ample room being provided for laying in the young growths without crowding the foliage, or having to pinch the points, an operation altogether unsuited to the management of late houses, and often injudiciously practised in early ones.

MELONS.—Devote all possible attention to the last batch of plants recently put out, and encourage them to make a strong and quick growth of vine by full exposure to sun and light, and by closing in time for the house to run up to 90° with solar heat and plenty of moisture. As we have before stated, quick, free kinds in 12-inch to 16-inch pots should be selected for late work, and the bottoms of the pots should be placed within the influence of the bottom-heat pipes when fire-heat through the last stages becomes a necessity. Train each plant to a single stem, carefully pre-

serve every old leaf from the base upwards, take out all laterals that start between the bed and the trellis as soon as they can be seen, and pinch the points out of the leaders when they have covered two-thirds of the trellis. Fertilise every female flower as it opens, select the most evenly balanced fruit for the crop, but defer stopping until the Melons have attained the size of Walnuts; then pinch at the first joint, and gradually remove all useless side shoots, laterals, and spray. When the time arrives for earthing up the plants the soil in the pots, as well as the top-dressing, should be in a dry state and fit for ramming firmly without becoming adhesive; otherwise it will cake and crack, and water will pass away without permeating the whole of the ball.

LATE CROPS in pits and frames will require a steady bottom-heat from fermenting material or hot-water pipes until the fruit is ripe, as anything approaching a check is sure to destroy the flavour, if it does not prove fatal to the plants. Let every fruit be raised above the bed, but not quite clear of the foliage, as some kinds of Melons are liable to turn brown when early airing is neglected on bright mornings. Place a few pieces of charcoal as a preventive about the stems, and apply quicklime and sulphur to the parts affected should canker set in. This troublesome disease may, however, easily be prevented by using a good, sound, but not over-rich loam, by the careful preservation of the stem leaves, and by stimulating at the proper time with tepid liquid or guano water in preference to top dressing with solid manure.

HARDY FRUIT.—As a rule, Peaches against south and west walls are carrying fairly good crops, and the trees are healthy. Look over newly grafted trees, and if the ligatures require entire removal, secure the young growths from the scions by tying to sticks lashed to the stocks. Cut out all old Raspberry canes and secure the young growths by tying them loosely to the stakes or trellis. Give autumn bearers an abundance of water over the mulching and support the young shoots well above the ground. The usual advice is to make new Strawberry beds in August, but when runners in small pots are not suffering the planting may, if necessary, be delayed for a short time. One of the main points in the preparation of Strawberry ground is deep trenching. Manure is of course a telling factor, and new virgin loam of a tenacious character should be obtained for planting in if possible. The balls should be wet at the time when they are turned out, and a continuance of dry weather will necessitate mulching and constant watering. Where old beds have been infested with mildew, breaking up is recommended; but if they cannot be spared, abundance of water, frequent dressings with soot and quicklime will be found a good remedy.

ORCHIDS.

EAST INDIA HOUSE.—Thrips seem very plentiful this year. We found a few in this house, but by fumigating some of the plants and dipping others they have been destroyed. *Odontoglossum Roezli* is very liable to be attacked by them, and when once they get into the young growths they greatly disfigure them; if they are even suspected of being present it is best to dip them in a solution of Tobacco water and soft soap. Plants of this are now making their growths and require plenty of water overhead, which has a tendency to keep thrips in check. There are not a great many Orchids in flower at this season, but those that are in that condition are very beautiful; especially so is the charming *Dendrobium filiforme*. This plant is liable to be attacked by red spider, which can, however, be easily cleared from the leaves by means of a sponge and soapy water. The plants require a good supply of water at this season, as the production of so many spikes from the small pseudo-bulbs has a tendency to cause them to shrink a little; a sufficient supply of water to keep the *Sphagnum* growing freely on the surface mitigates the evil. *D. glumaceum* is now finishing or maturing its growth, and also requires a plentiful supply of water. Than the charming, richly coloured *Cattleya superba*, now

in flower, few plants require less attention. Plants of it fastened to a small stump of Tree Fern and suspended near the roof glass grow and flower freely year after year. The *Angraecums* are mostly making their growths, and some of them, such as *A. Ellisi*, are pushing out their flower-spikes; all of them are making roots freely, a sure sign that they require plenty of water. The same cultural requirements are necessary for the *Saccolabiums*, some of which are showing flower; others have finished and are making thick fleshy roots, and where clean, good growths. At this season it is easy to keep up the required temperature and a moist atmosphere, but all attentions are vain unless the plants are kept quite free from insect pests.

CATTELEYA HOUSE.—A good moist growing atmosphere should now be maintained in this house. *Dendrobiums* have not yet completed their growth, and require a warm atmosphere and sufficient moisture. Such species as *D. Wardianum*, *D. crassinode*, and some others are liable to be attacked by red spider, which can, however, easily be destroyed by syringing the leaves well daily. They require a good supply of water at the roots, but it is a great mistake to keep on supplying them with water whether they need it or not. We have seen even the young rootlets of such hardy *Dendrobes* as *D. nobile* killed by an over-supply of water. Most of the *Cattleyas* are also rooting freely and making growths at the same time; we shade from bright sunshine, but the shading is not kept down a minute longer than is necessary. Suspended near the glass at the lightest, but coolest, part of the house are plants of *Vanda coerulea*; they are now making plenty of young roots and growing freely, and, like other plants in the house, they receive a plentiful supply of water, so that the *Sphagnum* in which they are potted is a mass of bright green. Plants of *Odontoglossum Phalanopsis* placed near the glass are daily syringed overhead; they are now growing very well and the syringing keeps them free from a small thrip otherwise very troublesome; if this should attack them, destroy it by dipping in Tobacco water. *O. hastilabium* is now finely in flower; it is a vigorous growing species, and requires a good supply of water, as the growths are not yet completed. *O. citrosum* has been placed in the lightest part of the house. This species requires to be kept very dry at the roots during winter in order to get a profusion of bloom; we did so with our plants this year, but at the expense of their subsequent growth. They are not growing quite so strongly as they should do. At present they require a good supply of water and to be placed near the glass. In this position they make the best growth. All the *Cypripediums* that like a moist warm temperature are also making very good growth; it does them good to syringe them overhead on the evenings of very warm days. The water used should be pure; indeed, we have such a good arrangement of rain water tanks, that even in dry seasons we never run short of rain water for the Orchids. The temperature with air on at night seldom falls below 65°. We may now expect colder nights; in fact, the weather changed much colder on the first week in August, the minimum on the evening of the 5th being 42°.

COOL HOUSE.—The hot weather during July was rather trying to most of the *Odontoglossums* and some of the *Masdevallias*, but we have now passed through the most trying period. We found that it was quite possible to keep the temperature a few degrees cooler than that outside by keeping the ventilators rather closer and syringing the walls, paths, and some of the plants in the house. The constant evaporation prevents the plants from taking any injury from the ingress of hot, dry air. It does not rush in, as the open ventilators are covered by the shading, which is always necessary when the sun shines at all. It is not the time for a wealth of bloom, but we have the handsome *Oncidium macranthum* always in flower during July, August, and sometimes well into September, and our well-managed house is never without flowering plants of *Odontoglossum crispum*. *Masdevallia Veitchii*, too, always persists in throwing

up flowers for the second time in August and September, but we pinch them off for the sake of getting a good head of bloom in the spring. The pretty little *M. Wagneri* and *M. Backhousiana* are also in flower at present. A word ought also to be given in praise of *Odontoglossum coronarium*, which generally flowers at this season. It is a splendid species not difficult to grow, but not generally a free bloomer. The plants have a peculiar habit of lengthening themselves by pushing the young growths about 6 inches ahead of the old one. They must be planted in a long basket formed of teak rods, and fresh growing Sphagnum should be prepared for the growths to root into; some rough peat and lumps of charcoal should also be mixed with it. The plants must be suspended close to the roof glass in the lightest part of the house. Good, strong, and healthy plants are sure to flower in such a position. It is necessary to keep a careful look-out for insect pests, which should be destroyed by dipping or washing the plants, as it is very dangerous to fumigate them.

NOTES BY A WORKING GARDENER.

As to whether this title may prove appropriate remains to be seen by the quality of the work that is put into these notes, not that writing is my vocation, far otherwise, as I feel far more in my element when making a Vine border, thinning Grapes, planting fruit trees, and even thinning or planting vegetables. Then why write? Well, I shall be honest, and say, firstly, because one likes to be seen in print—but this wish has long been gratified, so that it is not so strong as it used to be; secondly, gardener writers are by no means numerous, and one hopes to draw a stray sheep into the fold to exchange ideas with him through the garden press as to ways and means about our calling that shall be free from the “high and dry” style that seems to be proper in some quarters, and which I believe is called “scientific.” Of course I do not understand that, and there are many like me that are obliged to confine themselves to matters of fact and practice. I have a third reason for writing, and it is that I have qualms of conscience that *THE GARDEN* deserves better attention than I have lately been able to give it, so without further preface I buckle to the work in full confidence that my notes will meet with that friendly criticism that is generally observed in its pages. But there I am safe, because nameless, even if my sensitiveness does get a sting by severe criticism; besides, I have the advantage of freely writing or speaking of self when necessary without fear of being charged with egotism.

Deciduous trees.—From a recent outing in Berks and Hants I have come to the conclusion that these are in grander plumage than I have ever known them to be previously. Oaks, Beech, Horse and Spanish Chestnuts are simply perfection in size of foliage, colour, and vigour, and the landscape effect is consequently much finer owing to an entire absence of sickly verdure or hurricane-maimed boughs and foliage. The only trees that have at all suffered are the Limes, and these but little compared with the injury in former years from the weevil fly that often punctures every leaf with as much regularity as if it had been done to order by machinery. Of course there is no help for it except not to plant such kinds of trees, but bee-keepers in particular would not like that I should advocate annihilation of Limes, and I will not either, though they do give me a lot of extra sweeping up, first their blossoms then seed pods, and early and late shedding of leaves. I say plant these sparingly in kept grounds, but largely where neatness is not of so much account. But to return to deciduous trees in general; they are this season so superlatively grand, that it may reasonably be hoped an incentive will thereby be given in the direction of increased planting both for timber and landscape effect. I will add my notions as to the value of or preference for the various kinds by naming them in order of merit—Oak, Beech, Elm, Spanish Chestnut, Plane, Horse Chestnut, Birch, Lime, and Larch.

Evergreen trees.—This is hardly the season of year to discuss the merits of Evergreens, but the preceding note has given rise to this, for whilst pondering as to the beauty of the deciduous trees sundry coniferous trees put in their claim as being upsides with their annual new clothes brethren. *Picea nobilis*, the true Silver Fir, is certainly in extra silver array, and most of the trees are full of seed-bearing cones. I always describe the glaucous foliage of this tree as moonlight green, and it well answers this description just now. *Abies grandis*, *A. Morinda*, *Picea orientalis*, *P. cephalonica*, and the Douglas Fir (*Abies Douglasi*) have all made the most extraordinary growth this year. I suppose owing to the excessive heat, and by reason of the long series of quiet seasons that the trees have had, this extra growth is so much the more conspicuous. By the by, whilst on the subject of Evergreens, may I express what to some will be a terribly heterodox opinion, viz., that I have transplanted at all seasons and times of the year, and that the best results have accrued from early autumn planting, without any exception as to kinds operated on, of course having taken the necessary precaution to mulch heavily by way of protection to injured roots as well as to encourage earlier starting of new root growth by the warmth that mulching assures?

A quiet walk.—Impulsive, impatient, and restless, as I am said to be, I, for all that, sometimes feel in the humour for a quiet walk round the garden. I have just now had one, and what a privilege! all the men gone, I can talk to myself without fear of being overheard to my heart's content; moreover, I am not afraid of seeing a straight-backed fellow here, or of having my ire aroused by seeing a loitering “kill-time” one there; not that I am much pestered in that way, though occasionally a stray one tries to settle down, but our Indian heat quickly causes them to make tracks to a cooler climate. But I am digressing; my walk was intended to combine pleasure with profit, solace to the mind, that is real pleasure; notes for to-morrow's work, that is profit, and I have got both, and should like to go to bed now without another thought of anything, except it were thankfulness to a kind Providence for His goodness, but duty says, “first describe to the readers of *THE GARDEN* your walk,” and I will master self this time and do so. I began with the, to me, least attractive, but the most important, branch of gardening, namely, the vegetable department, for I meant to take the “bull by the horns” to-night, and find out why the Peas had done so badly. The ground was good, deeply trenched and manured; the self-same mode of culture had given abundant produce for years, but this season the yield is, and has been, the merest apology for that word. Plenty of seed was put in and germinated, but a large proportion, a good half in fact, dwindled and died as if devoured, but by what agency I could not make out; the fog is still dense, but I have got a streak of light to-night, having found a wireworm completely ensconced on a stem a couple of inches below the surface of the soil. As the ground was dressed with soil from an old pasture in which wireworm abounds, I think it more than probable that the real cause of this trouble is discovered. Moral.—To-morrow the antidote (a good dose of soot) shall be administered, together with a mulching of stable litter, to the successional sowings that as yet are not seriously affected. Cauliflowers have made amends for the Peas, and there is still no better kind than the Early London. Dean's Snowball, Veitch's Forcing, and Sutton's First Crop are, I think, synonymous and excellent for a very early batch, but not many should be planted, as they are quickly over and do not come in successionally, as does the same planting of Early London. The rains have started the recently planted Broccoli, Coleworts, and Kales into fine growth, and being planted in deep drills these must now be filled in level whilst the ground is moist; then however dry it may be afterwards there will be little danger of their feeling any ill effects from drought. A truly wonderful French Bean is the Canadian Wonder; here they are 2 feet high and

so overweighted with produce that they ought to have had supports, but no time can be spared for such work, and we must give away the surplus Beans to the men for the gathering in lieu of using sticks to them. It is generally known that this kind forces just as well as the best reputed forcing kinds, and is almost as early as the earliest when grown in the open air. What a pleasure it is at this late date (July 29) to view the Potatoes with the haulm free from the disease that almost invariably attacks it early in the month. Surely this betokens another good Potato year. Our finest for quality have been the Ashleafs, which I am sorry to say are done, and now we are using the Woodstock Kidney, which is much finer in appearance and of superb quality, though not equalling the Ashleafs. Fern's Early Regent as a round variety is the finest for quality that I have ever ate, and it is white and floury and a good cropper. The American varieties are fast sinking into oblivion, and my opinion is the sooner the better. There, now; I had hoped to get away without finding another job that needed doing soon, but the Box edgings look so seedy and untidy that they must be clipped forthwith. I like to do them in showery weather, but “winter stuff” planting hindered. From Cabbages to Roses (not Cabbage Roses) is a great stride, but not a long walk, and here they are—*Souvenir de la Malmaison* in all its pinky white perfection. There are dozens of plants on their own roots growing under Apple and Pear trees, and that they are quite at home may be gathered from the fact that they are almost always in flower. A dressing of bone dust is given them every winter, being dug in deeply, and this dressing is supplemented in May by a dressing of soot, and they appreciate the attention by giving no further trouble either by way of washing off aphids or sulphuring for mildew. Bad flowers are, as a matter of course, regularly removed, else we could hardly expect the amount of new growth and consequent succession of flowers that we now get. Other varieties of Roses there are here in quantity, but at present looking a bit washed out, and we must make the effort to at once tidy them up a bit by cutting off bad flowers and shortening back a few of the longest stray shoots. The late rains have worked wonders for the Roses, and there will be as good a second bloom as was the first. They would now just about relish a good watering with liquid manure; this is always the more effectively applied when the ground is moist, for under these conditions its manurial properties are at once appropriated by the plants. I have been revelling in Pinks and Carnations for some time now. I began with the old white Pink, then came Mrs. Sinkins, and no flattery is intended when I say that she is truly a beauty—pure white, good in size, and her fragrance is equal to that of the old red Clove Carnation; she is worthy of being grown by the thousand. This week Gloire de Nancy Carnation is the prima donna, being of great size, pure white, and perhaps may best be described as having all the good properties of the old red Clove Carnation, pure white being thrown in gratis. Then there are sundry seedlings of various colours and some few named varieties, together with immense spikes of *Lilium auratum*, *Gladioli*, *Phloxes*, *Mignonette*, &c., that make me long to linger, but darkness has already set in, and I turn homewards, resolving to have more of these sweet-scented flowers as space and means afford—visions that are just a wee bit marred, because time has not yet been found to tie up the flower-stems of some of the plants that have this evening afforded me a real treat. It must be done to-morrow.

CERTIFICATING PLANTS.

I WAS in hopes some of your correspondents would have supplemented the remarks (p. 59) on “certificating plants at South Kensington,” for the subject certainly wants ventilating. By what rules are certificates given? Are there any rules at all? For instance, a certificate was given by the society, on July 22, to Messrs. Paul for *Campanula trachelium pelviformis* as “a new va-

riety." What is a "new variety?" I have had it in my garden for two years, and I think Mr. Wolley Dod, who gave it me, will tell you that he has had it much longer. Would not a "cultural commendation" be quite enough for such a production? If the Cattleya Gaskelliana had been, as some members of the committee stated, "a mere variety of C. Mossiae," surely it was more deserving of a certificate than *Campanula trachelium* pelviformis, "a mere variety of C. trachelium." I could give a precisely similar instance in a case of my own. When *Milla biflora* was much scarcer than it is now I sent an excellent pot of it to the committee meeting. It was not even noticed. In the following year it was again exhibited by a nurseryman, and received a first-class certificate. Surely these things are not done in the interest of the trade. It is not very satisfactory to us amateurs to have even such a suspicion, and I hope some one will enlighten us a little on the subject.

A. R.

DATES OF FLOWERING OF VARIOUS PLANTS.

THERE are some very interesting "Phenological Observations" published every year in the "Quarterly Journal of the Royal Meteorological Society," which are communicated by the Rev. T. A. Preston. These observations for 1883 chiefly consist of the earliest dates of flowering of seventy-nine British plants in forty-five different localities in England and Wales, and four in Ireland; from Scotland there are no observations. There is also a list of the average earliest dates of flowering during the last nine years of forty-three common British plants, a table showing the dates of singing, nesting, and migration of various birds, and a list of the appearance of various insects. It is a pity that this last list is not fuller; only four insects injurious to cultivated plants are reported on—the common cockchafer, the fernchafer, and the large and small white butterflies; if more were reported on much practical benefit would be the result. In addition to the information given in a tabular form, there is a short account of the weather and its effects on vegetation during each month. "The weather during January was mild, with much rain and fog and with but little sunshine." "Wild flowers, though still abundant in most places, were hardly so much so as last year, 1882, except in the south-west of England, where the numbers were nearly equal." At Cardiff, no less than seventy different species were found in flower in January, the largest number yet recorded from any one place in January. Vegetation at most places was about a fortnight earlier than the average. March was unusually cold and plants suffered severely, and the tender herbaceous ones were cut to the ground. Vegetation was at a complete standstill. "At Lewisham the first Daffodil opened on March 17, but it had been opening for more than a fortnight. April was cold and vegetation backward." The first half of May was cold, and sudden changes to fine warm weather took place about the middle of the month, and this, aided by a little rain, brought vegetation forward. "As an instance of a sudden change at Cambridge there was no flower on the Horse Chestnut on the 14th, and yet the trees were covered on the 16th. The blossom of this tree appears to have been generally very scanty." Foliage appears to have been particularly luxuriant. Apples and Walnuts plentiful; Plums and wall fruit very scarce. The honey harvest was disappointing. From the tabulated returns of the

DATES OF FLOWERING OF VARIOUS PLANTS, it appears that all the plants reported on flowered later in 1883 than in 1882, with two exceptions, and that out of the forty-three plants, whose average earliest date of flowering is given for the last nine years, the Dog Mercury (*Mercurialis perennis*) is the most unpunctual, varying fifty-five days, from January 25 to March 21, and that the Meadow Pea (*Lathyrus pratensis*) is the most punctual, varying only fourteen days, from June 2 to 16. Some plants are much more variable than others in their time of flowering in various places;

for instance, the lesser Celandine (*Ranunculus Ficaria*) was noticed in flower on the 6th and 8th of January at Westward Ho! and Tiverton, but not at Babbacombe until February 22. At Marlborough it was in flower on January 3, but not at Cirencester until March 3, and in Middlesex, Buckinghamshire, and Hertfordshire not till quite late in February, a variation of fifty-nine days. The common field Poppy (*Papaver Rhæas*), on the contrary, flowered much nearer the same time at different places, varying only thirty-nine days. The Ragged Robin (*Lychnis Flos-cuculi*), out of twenty-eight observations, only varied eighteen days, May 22 to June 9, but two earlier and two later observations make the total variation forty-two days. The Horse Chestnut in twenty-five places only varied twenty days—from May 7 to May 27. At Bagnalstown, in Ireland, it flowered as early as April 26. There was a difference of fourteen days from May 12 to 26 in the flowering of the Laburnum recorded by twenty-eight observers; in Ireland it flowered on April 30. The difference in the flowering of the Blackthorn was twenty-three days from thirty-three observations, the earliest being April 1, and the latest the 23rd. Except Westward Ho!, March 14, and Killarney, March 14, Coltsfoot varied very much, from January 1 at Cardiff, to March 25 at Babbacombe, and March 27 at Hutton, in Lincolnshire. The common Primrose flowered at Wells on February 6, and at Macclesfield not until May 25, a difference of ninety-eight days, but the beginning of April appeared to be the most usual time. The Primrose is, however, an uncertain flowerer, for in sheltered parts of Sussex in a mild winter a few flowers may be found any day. I found them myself in hedgerows early in December, 1877, near Uckfield. The Snowdrop flowered at Salisbury and Bolton (Lincolnshire) on January 8, and at Parbold (Lancashire) February 13—thirty-six days. The Bluebell (*Scilla nutans*) was first noticed at Yeovil, Wells, and Marlborough on April 2, and at Great Cotes, in Lincolnshire, not till May 14.

THE COMMON COCKCHAFER made its appearance at Buildwas on April 20, but not until June 3 at Sawbridgeworth. The large white Cabbage butterfly appeared at Harpenden on March 5, and at Strathfield Turgiss on June 12, but it appeared generally in April and May. The small white Cabbage butterfly was not noticed until April 1, and appeared in most places before the 23rd. The author concludes the botanical report by saying, "One important lesson may be learnt from the experiences of the past year. Where farmers had a sufficient command of labour to take advantage of the favourable weather the results have been excellent, and a prosperous year has been experienced; but, on the other hand, where labour was scarce farmers were unable to work their land at the proper time; their sowing was delayed, they lost the good time for harvest, and thus have not benefited as much as they might have done by the excellent season of 1883." G. S. S.

NOTES FROM NEW ENGLAND.

Packing plants in cotton wool.—One of our Boston papers wrote the other day as follows: "People who send flowers through the post are cautioned not to use cotton wool for packing, because, being very absorbent, it draws from the flowers all their moisture." Now, to a sensible man such caution would be about as valuable as to tell him that if he does not wish to get wet in a heavy rain storm, he should take an umbrella. Yet there may be Americans, as I know there are some English and lots of Continental nurserymen, who persist in packing up rare, costly, and beautiful plants in cotton wool in this way—say take a *Dracæna*, get a small stake, wind it all round thick with cotton wool, then stick it in the pot, tie up the leaves close, and pack with cotton wool to prevent injury to the fine leaves, just as if the leaves are of any value after the footstalks are all rotten and the elegant leaves lying loose in the box with the main stem half decayed. This is just the way I have received £5 *Dracænas* and other rare plants. The cotton wool, as the writer says, absorbs the

moisture and holds it just long enough to rot all the leaves. However, I suppose we must all live and learn.

Strawberries, per contra, let me say that the English lovers of good fruit are as 100 to 1 in this country. You would be considered as puffing up somebody's new seedling if you published such a scrap as that of "J. D." (p. 17). Here a Strawberry is a Strawberry, and not much more difference is recognised than there would be in buying Carrots. If a dealer here was to reply as the dealer in Bond Street did, he would be likely to lose custom at once, for the purchaser would reply, "I think I know as much about Strawberries as you do," and perhaps remark, "I like the Wilson," because he never ate anything better, all being poor enough.

The Bermuda Lily (*L. Harrisii* or *longiflorum floribundum*, or even *eximium*, if Mr. Baker pleases to call it so. I cannot dispute it, as there is so much uncertainty about varieties of Lilies, but of all the *eximiums* I have received from Van Houtte, twenty years ago, and the Dutch florists since then, all were the same as the Bermuda Lily. I say Bermuda, because *L. Harrisii*, as well as *floribundum*, both came from Bermuda, the former brought to Philadelphia, and the latter to New York. I have had some 500 of them in flower for over six months; potted in October, they began to flower in February, and I could cut to-day (July 24) twenty-five splendid flowers from the same plant that flowered at Easter, when I had a magnificent show and disposed of quantities of plants 3 feet high, some with two stems and some with only one, each containing three to five flowers on very small bulbs. No *eximium* ever did this; besides, it is very much larger, being nearly twice as large as *longiflorum*. I do not believe the question may be considered settled, notwithstanding Mr. Baker has expressed such an opinion. Another thing; it does not, as THE GARDEN says, "produce several secondary stems from those first matured." These new stems are from newly formed bulbs of this year. *Eximium* is considered hardy here; the Bermuda Lily is not; it can only be grown in pots.

Honeydew.—Who are the scientific men of the Horticultural Society? Is it possible that they could repeat "that the general opinion (as expressed previously when the question was raised) was that it is more due to the intense heat causing an alteration of the starch into a sugary substance?" Set up a sugar manufactory! Up to this date with the summer temperature to-day at 70°, brilliant sun 90° at morn, and lots of such days since June 1, my Lime trees look as green as Grass. A year or two ago in an English summer, such as we occasionally have, the leaves were as black as your hat with the deposit of the excrements of the aphids, and walking under the trees was as good as going out in a shower of honey. Where are your scientific horticulturists? I am sure our old friend G. F. Wilson was not present. C. M. HOVEY.

Propagating tuberous Begonias.—*Begonias* of this class can be so readily raised from seed, and quickly attain a flowering size, that they are not propagated by cuttings so much as formerly; yet this latter mode of increase must be resorted to in the case of named varieties in order to keep them true. As the plants will now be in full growth, some of the side shoots may generally be secured for cuttings. These, if put in now and grown on quickly after rooting, will form fair-sized tubers this season, which would not be the case if delayed longer, as then many would in all probability perish during the winter. A good place for the cuttings is a close case, with a little heat, such as may have been used for the propagation of the more tender class of bedding plants, such as *Coleuses*, *Alternantheras*, &c. Three or four cuttings, according to size, may be put around the edge of a 4-inch pot, taking care that it is thoroughly drained. Soil of a light, sandy character, without any stimulants, is the best material in which to strike the cuttings. Their after-

treatment is much the same as that of similar subjects, except that from their succulent nature less water must be given than would be needful for Fuchsias, Heliotropes, and plants of that class. Where cuttings are struck in quantities, the tubers are started in gentle heat early in the season, as by this method great numbers can be propagated from a single tuber, but where there are no plants set aside for this purpose, a few cuttings may, as above mentioned, be generally separated from the flowering plants without injury.—T.

KITCHEN GARDEN.

CULTURE OF ENDIVE.

ON the Continent, and in France especially, one is much impressed with the superiority of the salads there obtainable. Some may be inclined to attribute their excellence to the way in which they are prepared, but it should be remembered that without suitable materials it is impossible to form a really good salad. Given plenty of good Lettuce, or, better still, Endive, and a good salad may easily be formed. The former we can grow in this country to perfection, but with Endive the case is different. At any rate, if it is possible to grow it as well as our French neighbours, it is not often that we succeed in doing so. This may not always be our fault, as but few are in a position to bestow so much "loving" attention on Endive as I am informed the French growers consider necessary. While we have Cos and Cabbage Lettuces in perfection there is less need of Endive, but it is when these do not blanch well and are deficient in sweetness and crispness that we require Endive, and even blanched Chicory, to improve the appearance of our salads, and, in some people's estimation, their taste also. Endive requires much less heat than Lettuce, and is more particularly valuable as an autumn and winter salad vegetable. In many gardens, if sown before August, it is almost certain to run to seed prematurely, and consequently it is unwise to depend upon one, or even two sowings.

SOWING.—Our plan is to make a small sowing of the Moss-curl and green-curl about the middle of July, another of the same varieties and improved broad-leaved Batavian about the first week in August, and a final sowing of green-curl and Batavian at the middle of August. The Moss-curl is close growing and blanches quickly, but is the least hardy, and is not at all suitable for late work. This variety requires less room than the others, and may be sown in drills 6 inches apart, and the plants should eventually be thinned out to the same distance asunder. The other two are strong growers, and the rows may well be 12 inches apart and the plants 10 inches asunder in the rows. Our first sowing is made on a small border previously used for pricking out Cauliflowers and Brussels Sprouts, and but few of the seedlings are transplanted unless it be to make up blanks. A long border previously well enriched for early Cauliflowers is devoted to the second sowing, this being prepared by simply having the surface lightly coated over with lime and heavily hoed. The drills are drawn and watered, the seed sown thinly and lightly covered. For the final sowing a warmer or rather better drained border is preferred—one previously cropped with early Potatoes. Digging being unnecessary in the former case, it is still less so when planting or sowing ground after Potatoes, but if the ground be at all poor I would certainly fork, but not bury deeply a dressing of short manure. We usually experience a great difficulty in preserving the young plants from slugs, and not unfrequently it is necessary to sow seeds in a frame so as to have sufficient plants to make up the large blanks caused by these pests. In some gardens where the soil is light and the drainage good it is a good plan to plant the Endive in shallow drills, say about 6 inches wide and 3 inches deep. In such positions they can be easily watered, and an occasional supply of liquid manure poured between them will cause them to grow to a great size. These drills also render

blanching a simple matter, all that is necessary being to cover a few plants a few days before they are wanted with either boards or slates. In order to have Endive in good condition over as long a period as possible, extra pains must be taken with the

BLANCHING AND PROTECTING. Unless properly blanched, Endives are not appreciated, and unless some measures are taken to insure protection, they are liable to be much injured, if not actually killed, by frosts. All that is necessary in the case of the early crops is to either tie up a certain number at weekly intervals, much as we would Brown Cos Lettuces, or cover with boards, or with rough litter or hay, and the same methods of blanching may be adopted with those protected. Of the three styles of blanching I prefer the hay, as under this the Endive blanches perfectly without being soiled or injured in any way. Only a given number, according to the demand, however, should be covered at a time, as they will not keep long after being blanched. Where portable garden frames are abundant, any number of plants may be covered with these, the lights being put on and further protection in the shape of mats and litter given when necessary. It is when frames are scarce that the grower has to adopt various contrivances in order to meet the demand for salading. In some districts, including where I am now, Endive does not keep well if lifted and stored, but in less moist neighbourhoods I have kept great numbers closely packed in frames. In this case the plants were lifted before severe frosts were anticipated, as if only slightly injured an early decay is certain to follow. A dry day was selected, the plants carefully tied up, lifted with a trowel so as to secure a good ball of earth to the roots, and they were then carried in hand-barrows to the frame ground. Frames previously used for Melon, Cucumber, and Tomato culture were filled rather closely with the Endive, and into the good soil they soon pushed fresh roots. The whole of the plants were untied, and were blanched with hay according as required, the last to be covered being the Batavian, this being the best keeping sort. We do not care to leave any quantity of Endive in the open from want of frame room, and have frequently stored some in a Mushroom house for early use, and many more in a dry shed, these proving serviceable in lengthening the period before those better stored under the frames, or covered where grown are cut. Whatever plan of storing is adopted, care should always be taken to lift before the plants are injured and when as dry as possible. The small or half-grown plants of the hardest sort sometimes stand out uninjured during the winter, especially if planted on a dry or raised border, and these sometimes prove of service in maintaining the supply of salading till such times as the frame Lettuces are fit for use.

W. I. M.

Spinach.—A good plantation of Spinach is worth a good deal in winter, and if the crop be sown at the right season and in sufficient quantity, the humblest need not want plenty of this wholesome vegetable all through the winter, and it makes a good change to the common vegetables then in season. The prickly-seeded is the best winter kind. It should be sown after some other crop—early Potatoes, for example—and the seed must be got in before the middle of August, except in the mildest parts of the kingdom. Sown sooner, the plants run to seed and are useless, whereas if sown at the right time, sufficient leaves are produced to afford constant gatherings all the winter, and in spring the growth is abundant and affords plentiful gatherings till June or later. The richer the soil the finer the produce, but it is not needful to manure for Spinach which follows Potatoes or any other well-manured crop.—J. S.

Rotation of crops.—Do we not, as a rule, attach more importance to rotation of cropping than there is any occasion to do? I suspect that if the fertility of the soil is maintained by regular manuring, many crops may be grown for an indefinite period of years on the same ground and

give excellent results. I am strengthened in this belief by a very luxuriant crop of Potatoes I saw the other day growing in the garden of an old shepherd, in the neighbourhood of Moffat, a well-known watering place in the south of Scotland. The garden is rather under a rood, and has grown Potatoes consecutively for the last fifty-three years, with the exception of one year—1817—when seed was so scarce and dear that Barley was sown instead. After the Potatoes are dug up the ground is left till the planting season comes round again, when cow manure at the rate of about eighteen tons an acre is applied, the manure being put in the bottom of the opening and the Potato sets planted on it. The quality of the produce is excellent, and with the exception of what the shepherd described as "an odd yin" (one), there has been no disease for many years. The soil is on the red sandstone, free, and rather stony.—J. W.

Winter Broccoli.—The way in which the northern markets are supplied with Broccoli during winter indicates to what extent this fine vegetable is used, and how important it is to plant hardy kinds in the north and in Scotland. Broccoli has been so crossed and intercrossed as to be as white as Cauliflower, but hardier. In this quality its value lies, because if the summer Cauliflowers would endure our winters they would be preferred, being of superior flavour; but none of them will endure more than a few degrees of frost, while Broccoli will stand about 20° or more, although no two sorts are equally hardy. As a rule, the summer Cauliflowers have larger, flatter, and greener leaves than Broccoli, the leaves of which are narrow and more frilled. I have never seen a Cauliflower-leaved Broccoli that was at all hardy, and Grange's Early is an example. It is a Broccoli, and if sown at the same date as the other varieties in spring, will invariably produce good heads in October and November, or earlier, but it perishes with the first frosts. Much of it need not, therefore, be planted. The hardest varieties that we have ever tried are Hammond's Imperial, raised in Yorkshire, Snow's Winter White, Backhouse's White, Knight's Protecting, Dilcock's Bride, Carter's Champion, and Cattell's Eclipse. The whole of these, except the two last, however, perish in very severe winters, but it is rare for a whole plantation of Champion and Eclipse to succumb; indeed, as a rule, most of the plants escape. They are the two hardest and latest Broccolis in cultivation, and we always plant more of them than any others, as they generally provide the latest heads in May and June till Cauliflowers come in. Eclipse is the better of the two, having fine large white heads; but the one just succeeds the other, so both are necessary.—J. S. W.

Summer planting Asparagus.—At one time it was considered to be bad practice to plant an Asparagus bed in June or July, but for all that I am convinced that these months are the best for the purpose, and that those who carry the operation out during either of them will meet with the greatest amount of success. I find that I am not alone in this opinion, as "J. C. C." (p. 9) seems to prefer summer planting, and says that he sustains few losses among plants moved at that time, which is just my experience. They take kindly to the ground and start off growing at once. I have just made a large plantation, and there is not a gap in the whole of the rows, although perhaps there might have been had the weather not favoured us, as there came a good rain just as we finished and the air has been genial since. I do not suppose I should have ever begun late planting had it not been for a friend of mine who was always short-handed, and consequently behind with his work. When I called to see him one day he and his men were busy lifting and making a number of beds of Asparagus with plants quite a foot high, at which I was surprised; but he, being a sanguine man, said he thought they would succeed, and I was curious to see if they did. I therefore called again shortly afterwards, and was pleased to see every plant standing erect and looking as fresh and full of growth as if they had not been moved; and from then, which was long,

TREES AND SHRUBS.

STUARTIA VIRGINICA.

AMONG the numberless trees and shrubs which we have now in gardens, and for which we are indebted to North America, the two *Stuartias* stand out conspicuously on account of their intrinsic beauty, interest, and variety. The Virginian *Stuartia* is one of those plants that have been nurtured in obscurity, so to speak, for the past century at least, for so long ago as the middle of the last century it was spoken of as having been introduced. At that period when it was the commendable practice of a good many country gentlemen to plant arboreta it seems to have been much sought after, the result being that there has been handed down to us a few grand specimens of it, which, now being matured, display the full beauty of the shrub. In the rich arboretum at Syon House, formed by the late Duke of Northumberland, a large bush of it is one of the most prized objects in the garden, it being probably the finest example of this shrub in Europe. Syon, however, is not the only place where this shrub has been cared for. Only the other day Mr. Scrase Dickens brought us from his fine old garden at Coolhurst, near Horsham, in Sussex, some admirable flowering twigs of it, and not only of *S. virginica*, but also of *S. pentagyna*, even a greater rarity than the Virginian species. *S. pentagyna* is likewise an old introduction, having been brought from America about a century and a half ago. It was then, and still is, called *Malachodendron ovatum*, but the two species without doubt possess identical generic characters. We, therefore, possess two *Stuartias*, and another near ally, *Gordonia pubescens*, so nearly resembles them, that for all practical purposes it may also be considered a *Stuartia*. The Virginian *Stuartia* is indeed a charming shrub, possessing a flower fully twice the size of that represented by the annexed engraving, which shows admirably the beautiful form of the flower. It is pure white except the little tuft of stamens in the centre, which is crimson. *S. pentagyna* is very similar, but it has not the red tuft of stamens and the carpels or incipient fruits are separated, whereas in *S. virginica* they are gathered into a flask-shaped organ. *S. pentagyna* is the hardier of the two, inasmuch as its home is more northerly than that of the Virginian species; consequently it is a more important plant for English gardens, although *S. virginica* is really not what one would call a tender shrub.

The latter inhabits swampy places or shady woods, and so the Coolhurst plant had seemingly been planted beneath the shade of trees, but Mr. Scrase Dickens tells us that his plant is evidently not doing so well as could be wished; therefore he thinks of moving it away from such dense shade and altogether out of harm's way in the shape of large trees, which would impoverish the soil about the roots, and this after all might be the cause of its degeneracy. In its native haunts no doubt the plant is grateful for a little shade to screen it from the full force of a Virginian sun, but here we should say it wants all the sun we can possibly give it in order to thoroughly ripen its growth, so as to better enable it to withstand our sharp winters. Mr. Scrase Dickens praises *S. pentagyna* as being altogether a finer species than *S. virginica*, the foliage being more robust and the flowers larger. Unfortunately, it is very difficult to propagate; all ways have been tried at Coolhurst, but so far none has been successful. This difficulty in propagation no doubt accounts in a great measure for its scarcity.

wise nearly dry; they tax themselves to the amount of £10 per foot of fall to pay interest on the very moderate cost of construction of this reservoir. 5. Fishing would be improved, particularly in salmon rivers, as the fish would take advantage of the full waters to run up the rivers in safety. Lastly, the fact of ponds of the nature of that here sketched being constructed would enable small towns and villages to obtain water supplies at the expense merely of filters and pipes.

As it is acknowledged that arterial drainage and the regulation of our rivers should be under the control of Boards representing the whole catchment basin of each river, these works might be undertaken by the same bodies, the cost being lent by the Treasury, and the interest secured by rates on all who benefit—namely, owners of flooded lands, farmers, manufacturers, towns commissioners, and rural sanitary authorities, according to the good that is done to each. The regulation of rivers can be greatly facilitated by the



Flower of *Stuartia virginica*; white, red centre (two-thirds natural size).

long ago, till now I have adopted the plan, and have always been satisfied with the result. The way in which I manage is to plant on the level in heavily manured and properly prepared ground. I cut trenches along the side of a line a yard apart, and then put in the plants 8 inches asunder. In doing this we are careful to spread out the roots and cover them with fine soil, after which a heavy watering is given, and the final filling in of the trench follows, and in this way we proceed till the planting is complete, when the ground is covered with a mulching to keep it moist.—S. D.

UTILISATION OF FLOODS.

THE destructive influences of floods occupy full attention, and many are the attempts to mitigate the evil; on the other hand, we quite ignore the benefits that may be derived from these very floods by skilful adaptation to useful purposes. The writer, having in charge and under course of construction the largest flood drainage, perhaps, in the kingdom, namely, Lough Erne district, has been led to study, not only the disastrous effects, but also the benefits derivable from flood waters. Every flood passing away to the sea is a waste of power; no doubt it does its work in the economy of Nature, but so far as man is concerned, it is simply waste—nay, more, it does harm. We have not yet found out how to control and use to advantage this immense natural force. The retention of a considerable part of the flood waters of rivers in mountain reservoirs is now advocated. Hitherto this has been little practised except for the water supplies of large towns and cities. In mountain districts flood waters can be easily impounded at a low cost, the land being generally valueless, and natural basins, easily turned into lakes, are frequently found in convenient situations; and for the uses hereafter detailed no filters or piping are necessary.

The system now advocated is to hold up so much of the flood waters as can be conveniently impounded, to be afterwards let down the rivers during periods of drought, so as to double or treble their flow during certain hours of the day, having the following objects in view: 1. To flush and cleanse the river courses, especially where polluted by dense populations, towns, and villages. The sanitary effects of an influx of clean water in a strong stream, say for two periods of three hours each during the twenty-four hours, would be very great indeed. Where a town lay on a tidal estuary at the mouth of the river, the periods of flow should be regulated so as to arrive at the mouth of the river at times of low tide. 2. By the same operation farmers along the river course would be benefited by their cattle being refreshed, and the stagnant drinking and standing pools being constantly renewed would prevent disease and promote growth; opportunities for irrigation would be afforded. 3. Assuming the reservoirs to be empty after the dry part of summer, they would be in a condition to hold the autumnal floods, which, though not so great as the winter floods, yet do far more damage, the crops being on the land; these reservoirs might be easily made large enough to retain one-third of the flood, and be it observed it is the top third of the flood that overflows the low lands, as the natural river courses are generally large enough to take half or two-thirds of the autumnal floods. 4. All mill powers on the river would be improved by the diminution of back water in floods and better supply in summer. About fifty years ago the linen manufacturers along the river Bann constructed a mountain reservoir, by drawing from which they are enabled to work when the river would be other-

use of Mr. Frank Stoney's anti-friction roller sluices which the writer has adopted at Belleek, the outlet of Lough Erne; each sluice measures 29 feet wide by 15 feet deep, which is nearly four times as large as the largest sluice ever made in any country. Though the pressure on each sluice is 85 tons and its own weight 13 tons, it can be raised easily by one man. For expedition, however, a small turbine is employed, which raises all the sluices, four in number, simultaneously, venting when open five millions of gallons per minute, or enough in half an hour to supply the City of London for twenty-four hours. Anyone who cares about such can see these sluices worked daily. There are other attractions making Belleek worth a visit—good fishing, excellent hotel, lovely scenery, at the outlet of lakes with fifty-two miles in length of unbroken water, hundreds of miles of indented margin, and numberless wooded islands, all in the loyal county Fermanagh. That these suggestions could be carried out with advantage in many cases is the opinion of the writer after careful consideration of all the practical elements.—JAMES PRICE, M. Inst. C.E., in the *Times*.

EUONYMUSES, GREEN AND VARIEGATED.

THE different varieties of the evergreen *Euonymus japonicus* are now among the most popular of shrubs, and as they readily adapt themselves to any circumstances under which they may be placed, they are used for a great variety of purposes. As seaside shrubs *Euonymuses* have few, if any, superiors, while for window boxes, balconies, and such places they are often employed. Again, when trained against a wall their dense glossy foliage is very effective, whether it belongs to the plain dark-leaved kind or the golden variety, the silver edged, or the nearly allied *Euonymus radicans*, all of which are of quick and free growth. The *Euonymus* is principally propagated by means of cuttings, which may be put in at any time, but autumn is generally preferred for that purpose, as the young shoots of the preceding summer will by that time have acquired a moderate degree of firmness, and therefore be in a suitable condition for the formation of roots. The cuttings will strike if put in the open ground, provided a somewhat sheltered spot be chosen for them, but except along the southern coast, or where the winters are correspondingly mild, the protection of a frame should be accorded them, otherwise, in the event of a wet and cold winter, the loss will be considerable.

The method we employ with great success is to take some ordinary movable wooden frames, and after removing a few inches of the bottom soil, replacing it with siftings from the potting shed. The latter consist for the most part of a light open compost, but if necessary more sand may be added. The surface of the bed is then made a little higher than the surrounding soil, but not more than an inch or two; in fact, just sufficient should heavy rains occur to prevent the bed from getting too wet. If this is not done, the water will percolate through quickly into the lighter soil, and cause it to become more saturated than the ordinary soil of the border. The cuttings are left from 4 inches to 6 inches in length, and the leaves are stripped from the lower half. It is not necessary to take off the cuttings at a joint, nor to use a knife or scissors for the removal of the leaves; the quicker method is to take the upper part of the cutting firmly, but gently, in the left hand, and with the right strip off the leaves by means of a downward pull. In this way they come off without any injury to the bark, provided each one is taken separately; but if several are laid hold of at once, it frequently tears away some of the bark, and renders the cutting liable to decay. The soil having been pressed moderately firm, the cuttings are put in as thickly as possible without overcrowding, and when finished a thorough watering is given. After allowing the foliage to dry, the lights are put on and shut quite close.

The after treatment consists in looking them over from time to time, to remove any symptoms of decay, or to give water if necessary; while, if put in before the end of October, a little shading during bright sunshine will be of advantage. The lights should be kept close at all times, except the foliage becomes too wet, when they may be taken off for a time, but replaced as soon as practicable. In this way many will be struck by the spring, and the others then push out roots so quickly that the lights can soon be removed. A good practice is to go over them before they start into growth, and just pinch out the top of each shoot, as that tends greatly to induce a bushy habit. When sufficiently rooted, they are planted out in a bed prepared for their reception by a thorough digging, and the incorporation of a quantity of leaf mould with the soil. The plants are watered when necessary during summer, and by autumn are good little bushes, which after another season's growth are useful for many purposes. A good mulching of leaf mould will, by preventing rapid evaporation during hot weather, greatly economise the labour of watering. The variegated *Euonymus radicans* strikes root easily under almost any conditions—indeed, when trained against a wall, if the latter is in any way damp, it will frequently push out roots which adhere to the surface of the bricks, or when in the form of little bushes they

may often be pulled into several pieces, each with roots adhering thereto.

Another method is often employed for the propagation of these *Euonymuses*, and that is by grafting them on the common Spindle tree (*Euonymus europæus*), the deciduous character of which does not seem in any way to influence the scion. The Spindle tree is easily raised from seeds sown in the open ground. When about the thickness of a lead pencil, the young plants should be lifted during the winter, potted in small pots, and plunged in a bed of coal ashes till September, when they will be thoroughly established and fit for grafting. This is a very simple operation, for, as the stock does not readily succumb, it may be headed down to within an inch or so of the surface, and then cleft grafted, *i.e.*, split the stock down the middle, and if the graft is of equal size, cut it in the shape of a wedge, and having inserted and tied it firmly in position, the operation is complete. Should the stock, however, be much larger than the scion, a good way is to leave the bark of the graft only on one side, and put in two scions, one on each side of the stock. They join as well as one, and, as a matter of course, form plants quicker. After being grafted, they should be put in a frame, and kept perfectly air-tight till a union has taken place, which will be before winter, provided the operation is performed by the middle of September. If tied on securely, and the frame is perfectly air-tight, no clay or wax of any kind will be necessary. One thing to be observed as regards the different variegated *Euonymuses* when in a young state, and especially the golden one, is to remove any green shoots as they make their appearance; otherwise, from their greater strength, they soon obtain the mastery, and outgrow the variegated portion.

Ribes speciosum.—The Flowering Currant (*Ribes sanguineum*) and its varieties are everywhere common, and the golden flowered *R. aureum* is seen more frequently than at one time; but we may often search in vain for the Fuchsia-like *R. speciosum*, though when in flower it is surpassed by no other in the genus. From the circumstance of its propagation being less easy, and its rate of growth slower than in the kinds just named, together with the fact of its being more particular as to soil and situation than they are, is to be attributed the reason of its comparative scarcity. The habit of the plant is somewhat spreading, so that many of the long, pendulous blooms often fail to show themselves to advantage unless the plant be secured to a stake when young, and encouraged in an upward direction. If this is done, many of the side branches are then at a sufficient height from the ground to allow the flowers to be seen. Perhaps the best position for it is on a wall, for, with the amount of shelter thus afforded, the leaves are sometimes retained nearly throughout the winter, and, owing to the thorough ripening of the shoots, a profusion of its bright crimson blossoms is insured. This *Ribes* is a native of the western part of North America, and was introduced into this country about half a century ago.—ALPHA.

Indigofera floribunda.—Though too tender to pass the winter out of doors without injury in most parts of the country, unless protected by a wall, this *Indigofera* is so handsome during summer that such a slight amount of shelter is well repaid by its fine display of rosy purple Pea-shaped blossoms. For walls up to 6 feet in height it is better suited than for higher ones, for which more vigorous climbers are to be preferred. Where a sufficient distance from the wall can be allowed, a good way with this, as with most other slender-growing subjects so employed, is to secure the branches in position till the space allotted to them is covered, and after that the slender shoots may be allowed to grow in a natural manner, and, being of a drooping character, they clothe the wall very gracefully without any of that stiffness which is so apparent when the plant is regularly pruned and secured tightly to its support. When growing in a natural manner, the shoots that depend from

the wall are liable to be cut by frosts, but then the main branches are in snug quarters, and on the return of spring quickly break into growth again. Whether the plant exhibited some time ago as *Indigofera floribunda alba* (regarding the correctness of which name some doubt has been expressed) be a white variety of this kind or not, there is no question as to its being a pretty white flowered wall plant; and more than that, some small specimens in pots under glass at Coombe Wood were in the spring profusely laden with blossoms and very attractive.—K. F.

THE STONE PINE.

As the Oak is a tree typical of English landscape, so is the Stone Pine of that of Italy, varying somewhat in habit according to locality, but always



The Stone Pine in Italy.

majestic and strangely impressive to a northern eye, whether in dense forests, as near Florence, in more open masses, as at Ravenna, in picturesque groups, as about Rome, or in occasional single trees, such as may be seen throughout the country, but rather more frequently towards the coast. In these isolated trees their imposing character can be best appreciated, the great trunk carrying the massive head perfectly poised, an interesting example of ponderous weight gracefully balanced. The solid weighty appearance of the head of the tree is increased by its even and generally symmetrical outline, this especially in the examples near the coast, the mass of foliage being so close and dense that it looks like velvet, and in colour a warm rich golden olive, strangely different from the blue-greens and black-greens of our northern Pines. The character of such isolated trees is perfectly shown in some of Turner's pictures in the national collec-

tion—the “Bay of Baie” and others of the same series. The Stone Pine bears very large cones, whose seeds are edible; when quite ripe they are good and nut-like. Sometimes the Italians roast the barely ripe cone, dashing it on the ground to break it open, but the ripe seeds of the older cone when it naturally opens are better worth eating. The empty cones are in great request for lighting fires. They are full of resinous matter, and burn with a cheerful crackle and a delightful fragrance.

Late flowering Thorns.—A couple of good late flowering Thorns are the Cockspur (*Crataegus Crus-galli*) and the Tansy-leaved *C. tanacetifolia*, kinds which should by no means be omitted where flowering trees are desired, as they come in at a time when the bulk of their class is over. The foliage of the Cockspur Thorn, especially in some of its more vigorous varieties, is very handsome, being of a dark glossy green, a colour which contrasts in a marked manner with the hoary foliage of the Tansy-leaved kind, especially when the two are in close proximity to each other. The blooms of both are white with, when first expanded, crimson anthers, but in foliage and habit they are as widely different as possible.—H. P.

Pinus Pissardi.—During the early part of the season I must confess to being disappointed with this new purple-leaved Plum, its foliage being at that time of a rusty green tint, by no means pleasing, and certainly not to be compared in depth of colouring with that of the purple Hazel, Birch, Beech, or the red-leaved Peach, but as the season advanced a great change for the better took place, and as now seen this new-comer fully bears out all that has been said in its favour. It should be planted where it is exposed to the full rays of the sun, as even if slightly shaded it is by no means so deep in colour as it should be. We have a couple of dozen of it planted so as to form a clump or mass, and they are always admired by everyone, the light brownish crimson colour of the youngest shoots and leaves being very pleasing when contrasted with the darker tint of the more matured foliage. This Plum will no doubt become popular, and especially valuable for late summer and autumn effect, as then its merits are more apparent than earlier in the season.—ALPHA.

Cupressus Lawsoniana.—For lawns of small extent this is unquestionably the best of all the family of Cupresses. Its pyramidal habit and density of growth correspond well with limited surroundings, and what makes it still more valuable is the fact that it is not particular as to soil provided the staple is not a stiff, cold clay. Although it thrives best in pure country air, yet it will do fairly well in the suburbs of towns. There are several varieties of this Cypress, but for the purpose here named the original kind or type is doubtless the best, as it always possesses a pleasing tone of green. In the pleasure grounds here we have a nice little specimen of *C. Lawsoniana aurea*, of which I am inclined to think highly. It grows very freely, and maintains its colour in such a way as to fully justify its name. *C. Lawsoniana viridis* is both distinct in colour and growth, and in positions in which a compact growth is desired it may be freely planted. For dwarf evergreen hedges it is undoubtedly most valuable, as it will bear clipping with the shears with impunity.—J. C. C.

SHORT NOTES.—TREES AND SHRUBS.

Chimonanthus fragrans, or *Calycanthus præcox*, as it was once called, is with us producing many large seed pods which promise to ripen. Is not this unusual? and does it not prove what extraordinary genial weather we experienced in January and February last, enabling this hardy flowering shrub to thus set its fruit? I might add that our tree is trained against a very sheltered south wall.—WILLIAM CRUMP, *Madresfield Court, Malvern*.

Spiræa grandiflora.—Mr. Webster commends *Spiræa Douglasii* and Mr. Clarke *S. arifolia*. Allow me to say a word for the so seldom referred to *S. grandiflora* that grows even taller and more rapidly than the last named, running stems up to a dozen feet in one year. Here it is called the Fern-leaved *Spiræa*, from the resemblance of the foliage to Fern fronds, while the great feathery plume of flowers is often 20 inches long. Nothing is so handsome for filling up rapidly old or objectionable corners or angles.—W. J. M., *Clonmel*.

WORK DONE IN WEEK ENDING AUGUST 13.

In commencing this subject, I think it necessary to say that I have the direction of a garden which may fairly be called a representative one, both as to size and branches of gardening carried on in it; and the notes made, if not solely, will be very nearly such as are suggested by my own doings; and that readers of THE GARDEN may have no cause for complaint, I intend to note failures as well as successes, in the hope that the hints given may be doubly useful—viz., as warnings and suggestions. Being a record of daily labour, there will necessarily be repetition to a certain extent, but this shall as far as possible be avoided. Of course, it is not intended to enter into every detail or to allude to all the work that is done on the dates given.

AUGUST 7.—The weather to-day being dry and hot, and the showery weather of last week having been favourable to the growth of weeds as well as crops, hoeing has been the principal work. Carrots, Parsnips, and Cabbages were done rather deeply, as the ground was getting baked and cracking, but surface hoeing, merely to kill small weeds, was all that was necessary in the case of Lettuces, Turnips, Asparagus, and recently planted Broccoli. We made another sowing of Cabbage for spring cutting, the weather being so exceptionally hot; the plants from the first sowing, made a fortnight since, we shall destroy, as they would probably run to seed, owing to being sown too early, at least too early for such a season as this. We sow thinly in drills 9 inches apart, then pricking out is not needed. The aspect should be south or west; ours are sown on a western border that has been cleared of summer Lettuces. The latest row of Peas has just been staked; they look anything but happy; none but the earliest kinds have done really well. Cool and moist is the kind of weather that Peas enjoy. Mulching and watering appear of but little service to this crop when the thermometer day after day registers 86° in the shade; add to this the injury that sparrows and chaffinches seem bent on performing, that is, of having every Pea that is grown, and till the drought ends, netting over the rows and shooting the delinquents is the only way by which we can make sure of the produce. This is the summer for ridge Cucumbers and Vegetable Marrows; they grow anyhow, and all we find it necessary to do is to thin out the shoots once a week and give them plenty of water. Cut the fruit daily that the plants may not get exhausted by over-fruiting. Marrows are generally relegated to some out-of-the-way place where but little sunshine can reach them, an essential they need just as much as any other vegetable to impart flavour and substance of flesh; hence the charge of insipidity so frequently, but unjustly, applied to them. This has been a rare kitchen garden day, and if one could but know the large amount of hand-weeding that the few hours of hoeing have prevented, not to mention the benefit to the crops from moving the soil, no opportunity would ever be lost of making the most of such a day.

AUGUST 8.—Another scorching day; so after the morning's mowing and sweeping up, hoeing has been again the order of the day. Shrubberies, Azaleas, and Rhododendron clumps have all had a turn, and now we shall enjoy freedom from weeds in these quarters for this season. If we could afford the time we would have the seed-pods picked off all Rhododendrons, but as it is, only the best varieties and most conspicuously placed beds and plants can have that attention, and the altered and improved appearance of those so cleared make one wish for more assistants; then would not we have all in proper order. I ought to have added that the Grass verges round the clumps and the edgings of walks near them came in for a trimming up at the same time. My notions as to keeping the edgings of Grass verges closely cut are of a very stringent character; “must be done,” is the order given, if there is but an inch hanging over the gravel. We cannot afford time to sow Grass seeds for the purpose of pulling them up, and this is what virtually takes place when cutting betimes

is neglected. 90° in the shade have been too much of a good thing for single Dahlias and Fuchsias; they seemed scorched up and have this evening had a good watering and a syringing overhead. How inveterately do these Dahlias seed. About every alternate day we find it necessary to relieve them of seed-pods, else flowering is quickly over, but this done they keep on growing and flowering profusely. Violas and Calceolarias are the only other plants that dislike the intense heat, and till there is an end of it they should be kept well supplied with water, which should always be given in the evening, and bad and seeding flowers should also be regularly removed. Viola Mrs. Gray is a grand white and stands the drought well mixed with pink Pelargonium and *Ageratum Cupid*—a mixture unique and striking. Though I do not generally approve of shading Vines, to-day I thought it advisable to do so to prevent scorching. A little whitening mixed with water and syringed on the glass takes but a few minutes to do and saves an infinity of vexation by preventing the scorching of the foliage. We have done all the vineries in this way, and can now contemplate to-morrow's sunshine with complacency. The first shower will wash off the shading, but this need not bother one, seeing that, if necessary, it may quickly be renewed. The borders should be looked to. Vines in late houses particularly are just now at a very critical stage of growth, and ours to-day have had a regular drenching, the amount given being in accordance with the common-sense rule of using one's own judgment. Some soils take tons, with others the singular number would be sufficient; hence local conditions must be taken into account in such matters.

AUGUST 9 (Saturday).—This is what we call “flower garden day.” All outside hands have been employed in completely overhauling the whole of the beds. We began with mowing and finished with running the roller over the walks; the intermediate labours, such as finishing picking off bad flowers, &c., began yesterday, also pinching in such plants as require it in order to keep formal bedding designs true to pattern. The plants most needing this attention are Golden Feather Pyrethrum, *Gnaphalium lanatum*, Pelargonium *Manglesi variegatum*, *Leucophyton Browni*, variegated Thyme, and *Herniaria glabra*. The two last we clip, and also the extreme points of *Lobelia speciosa*. This bit of manipulation is a real wrinkle in Lobelia culture, for it ensures fresh branching growth, and consequently continuous flowering. Abutilons, Marguerites, Grevilleas, Ricinus, Dahlias, and some few other plants have all been examined as to ties. There is nothing like doing such work regularly, as then there need be no apprehension as to a storm breaking them down. Pelargoniums have grown amazingly this season, and are flowering well, too. We shall begin propagating them immediately, and meanwhile, for appearance sake, we have removed a few of the straggling shoots. Roses have shared in the general clearing up; all bad flowers have been removed, and here and there a shoot cut back; some few are affected with mildew, and these have been dusted with sulphur and well watered, which will probably effect a cure; if not, the dose will be repeated at an early date. To-day we were concerned to find that Apricots were following the example of Strawberries, and ripening much too rapidly, or rather all at once, and therefore in hopes of lengthening out the season a little bit, we shall shade some of them with mats, and gather others before they are dead ripe, as in that state they keep several days longer, and are little if any inferior to those gathered from the trees in a usable state. We gathered good fruit to-day from a south wall of Early Albert Peach; for open-air culture this is one of the very best of Rivers' seedlings.

AUGUST 11.—At one o'clock the thermometer registered 91° in the shade. How thankful we felt that our vineries were shaded, for surely no Vine foliage could stand without injury such heat. Melons and late Peach houses we also shaded to-day, else it must have been a case of roasting rather than ripening; as it is we have found a

few Peaches scorched, and have relieved the trees of them, and being on the verge of ripening they will make excellent tarts. Watering of Chrysanthemums and pot Strawberry plants seems a never-ending matter; three and four times a day do they need a supply, our rule being never to allow them to get dry. They are always watered singly with a spouted pot, and well syringed overhead in the evening. Weeds and runners have been cleared off to-day, and they will need similar attention in about a week's time. The lateral growths on late Vines have been stopped rather closely back, and the few shanked berries cut out. What a puzzle shanking is! The Vines may be healthy and vigorous, the bunches good, and the berries the same, and yet half the bunches on the same Vine may be perfect, not having a bad berry, and the other half with from three to a dozen bad berries in each bunch. A check of any sort, I believe, predisposes a Vine to an attack of shanking, such as lack of water, or an overdose of cold water, or cold currents of air, every one of which we thought we had avoided; nevertheless we have not quite escaped shanking, but if never worse than it is this year we shall think ourselves fortunate. To aid the colouring process, air is left on rather freely these warm nights. Early Peaches are having the wood partially thinned out, our aim being to admit daylight to all the shoots intended to fruit next year; syringing with force is necessary to keep down spider and thrips, and this is done night and morning, and full air is left on day and night.

AUGUST 12 AND 13.—A thunder storm (no rain) has given us partial relief from intense heat, and work can now be done comfortably. Our principal jobs these two days have been the clearing of Strawberry beds of runners and weeds, and as soon as rain comes to make the soil work kindly they will be lightly dug over, but not more than 4 inches deep, for if done deeper than that many of the best roots would be destroyed. Plants that have borne three seasons consecutively are being destroyed by peeling them off with spades, and as soon as we get moisture Broccoli will be planted between the rows. Borders containing Gladioli, Phloxes, Asters, late Carnations, and herbaceous perennials generally now take up so much precious time in the way of tying that one is apt to grumble, and wish that stakes and ties grew with the plants; but there, if they did, fewer gardeners would be needed, and then we should be worse off than now. *Lilium auratum* is blooming gloriously in the open border. Our soil, which is naturally inclined to peat, but which is, perhaps, best described as a sandy loam, seems to suit this Lily well; some of the stems are 4 feet high, and have from eight to ten flowers on a stem. Of course, being so fine, these were tied to stakes ungrudgingly.

SOUTHERNER.

COVENT GARDEN MARKET.

IN an article of the *Original* dated September 16, 1835, by Thomas Walker, it is written as follows: "It is to be wished that every portion of the labouring classes were too refined for the filth of Covent Garden. . . . What must necessarily be the moral state of the numerous class, constantly exposed to the vicissitudes of the weather, amidst the mud and putridities of Covent Garden?" To these remarks, written nearly fifty years ago, a note was appended a short time afterwards: "Since this was first written Covent Garden has been remodelled and greatly improved as to buildings, but as to slovenliness and filth much remains to be done. This is to be lamented on another account, as there are the elements of a very agreeable place of resort." The time has long gone by when anyone would think Covent Garden a pleasant "place of resort" unless he had some lucrative business in the neighbourhood which made it worth his while to endure the odious smells which still infest the district. There is no excuse for the present state of things, which only continues to be in a kind of way tolerable to us because it has been found tolerable to our fathers and grandfathers. But times have changed. That a man shall suffer his property to become a public nuisance

is now-a-days one of the gravest charges that can be brought against anyone of hereditary wealth and influence. But it remains true now, as it did half a century ago, that Covent Garden is a filthy and noisome place; that those who live in the neighbourhood suffer from its evil condition; that those who pass through it are constantly annoyed at the foul smells which come from it; and that demagogues find in the present condition of Covent Garden a plausible argument against the rights of property. Again and again has public attention been called to the matter. Again and again for some years past have complaints been made on the subject in every paper in London. But the Mud-market remains as it was. "The evil," as Walker put it fifty years ago, "lies in the bad contrivance and arrangement of these places of public concernment." On whose shoulders the bad management may legally rest is a question into which we need not now enter. But it is certain that people in general will hold those responsible who derive profit from land which they have suffered to become a nuisance to all but the owners. At the present time when the rights of property are challenged, it especially behoves great landholders to think whether they are all of them sufficiently alive to the duties which the possession of large property imposes on the owner. Each black sheep throws discredit on the blameless members of the flock; and the spectacle of any one man in high position getting money from what is a public offence offers the best of all weapons to the radical demagogue which can be desired.—*Saturday Review*.

INODOROUS MANURES.

THIS is a subject that has not been alluded to by those who have written on artificial manures lately in *THE GARDEN*, but it deserves a word. When in a large seed shop the other day, an amateur present enquired about manures for plants, and objected to certain well-known artificial manures, on account of their smell, and the seedsman informed me that there were many objectors of the same kind, but that gardeners themselves if anything preferred the odoriferous compounds. There are some special manures, like salt, soda, soot, &c., which are inodorous, but they can only be used for a few purposes, and are not generally useful. Compounds, whether artificially prepared or home made, if composed of half decomposed vegetable or animal matters, and fit for general application, as a rule have a disagreeable smell, and it is quite unreasonable to expect them without it, unless they are deodorised by the addition of materials that add to their bulk, but reduce their strength at the same time. We prefer to buy a manure of full strength and to deodorise it ourselves, and that can as a rule easily be done by the addition of a little fresh loam. Manures from the cow-house, or piggy, or farmyard generally all smell, often offensively, whether liquid or solid, but we know that some of the most powerful plant stimulants come from such sources; and as for guano, everybody knows the scent of it well enough. It is the same with concentrated artificial manures made from bones and other animal substances. The only two artificial manures I use, both of which are extensively employed and of proved excellence, are Beeson's and Standen's, and it is not an agreeable task to apply a dressing of either of them, the smell is so strong at first, but soon disappears. Both are largely composed of animal matters. Beeson's manure is exclusively composed of fresh bones softened, not by chemicals, but by steam, in large cylinders, after which raw blood is added and superphosphate to fix the ammonia and prevent fermentation. The bones and blood are the products of the knacker's yards, and the quantities of fresh bones sent to the mills weekly are enormous. My advice on the whole, therefore, to cultivators is not to be too sensitive on the subject of smell of manures, for the worst smelling are as a rule the best, and when applied to pot plants in glasshouses a little loam sprinkled on above the manure will do away with the smell. I always apply manures to Potatoes, Peas, and such-like at first, because manures that suit

these will suit most other things, and those mentioned are both quick and lasting in their effects. Considering that they can be conveniently applied, and that a small bag will go a long way, I reckon such artificial manures cheaper than most others.

J. S. W.

NOTES FROM ASKE HALL.

ASKE is situated near Richmond, the latter one of the prettiest provincial towns in Yorkshire. In close proximity are the three famous dales of Yorkshire, than which nothing more quietly picturesque can well be imagined. Query: Why are so many hurrying still further north, leaving in their rear our historical abbeys and priories? The tourist frenzy for high mountains, which the majority look on, but avoid, is hard to explain. The woods and park round Aske Hall are extensive and of very old formation. The mansion is on rising ground, and stands well retired from the road. The prospect from it is checked by trees and pleasure grounds on all but the entrance side. Lord Zetland, the Lord of Aske, only resides here late in autumn and winter; therefore the grounds are made to look best at that season. The shrub bedding is good. The lawn, which is now being cut close, so as to be at its best in the earlier part of the shooting season, slopes upward from the house, and finally ends in a line of trees, which hide the kitchen garden and greenhouses.

FRUIT CULTURE.—Grapes are good, especially Muscats; a Vine of Madresfield Court, 4 rods trained up, is finishing in magnificent condition without a sign of cracking. The spurs are left a good length, and no shading is used except a thick curtain of foliage. The same remark applies to Dr. Hogg, a variety of which I noted five or six Vines. Mrs. Pince and the Muscats are syringed about one o'clock in the day when in flower, and by this means Mr. Letts, the gardener, never fails in obtaining a good set. The same treatment is practised in the case of Peaches. This is the natural way if we reason from the dews outside morning and evening. The winter dressing consists of a good proportion of gas tar.

PLANT CULTURE.—This is Mr. Letts' forte. The plants here were all bought when young, and are the result of eight or nine years' constant attention. Their growth has been wonderful, and they are still as vigorous as ever, and the very picture of robust health. For all smooth-leaved plants the dressing to keep insects in check is paraffin; anything with a rough skin it injures, and likewise any plant with porous wood, the globules of oil being retained on a rough or hairy surface. Crotons show no signs of insects, and to this in a great measure is, no doubt, due their fine growth and beauty of colour. Plants of Queen Victoria are 8 feet through in a 16 inch pot. The finest plant here, however, is *Cycas Groomi*, ten years old, and furnished with a fine bloom on the back of the leaves. This is the plant which was admired by so many when shown at New-castle. *Anthurium Scherzerianum* is also well represented. In Ferns the finest specimen, and an extremely valuable one too, is *Gleichenia rupestris glaucescens*. This ought to become a general favourite. Heathbs are well grown, one of the most lasting in flower being *Dennisoniana*; *Parmen-tieriana rosea* likewise is a very valuable variety.

FLOWERS FOR CUTTING.—People at a loss to maintain a constant supply of cut flowers might obtain a good deal of information at Aske. *Hibiscus rosa sinensis* trained on the back wall of a corridor keeps on blooming, more or less, all through the winter, and in August and September it is one glow of scarlet. This is just the position in which to grow it, and what can be more effective in decorative work than a few flowers of it well surrounded with Ferns. Up the iron supports of a conservatory is trained the now well-known *Asparagus plumosus nanus*. *Eucharises* are grown in quantity; *E. candida* is more useful for bouquets than *amazonica*. It is a constant bloomer, every bulb being floriferous; this was likewise the case in April. This plant is kept too long in one pot, and for constant cutting three bulbs in a pot are

quite enough. The division should be done in January. The plants ought to be kept in the shade and the foliage constantly moistened. Gardenias are planted out, and to see them at Aske one would think that bug never infested such plants. Mr. Letts' insecticide is paraffin. He noticed that bug is most frequently found within the little film of skin whence the bud breaks. This skin he carefully removes with a knife and dresses the plants to cool treatment, so as to retard them for winter flowering. Ixoras are dressed in the same careful manner. I have spoken at some length about indoor plants, but let no one think that the more homely flowers are neglected either by Lady Zetland or her gardener. Along one of the corridors a Honeysuckle is trained, and in August and September it affords a rare treat to any one somewhat surfeited with the common run of greenhouse plants.

C. A. M. CARMICHAEL.

THE GARDENS AT HIGHCLERE.

HIGHCLERE is one of our best gardens, in the higher sense of possessing a noble collection of forest trees, grouped around wide stretches of Grass. It is also one of the gardens which are still unviolated by the landscape gardener—we mean by the so-called art which merely cuts up the finest foreground of a country seat with a geometrical plan, and interposes more or less awkward walls and balustrades, &c., between the house and its fairest prospect. At Highclere one may pass easily from the house in all directions without meeting with any impediment of the kind alluded to. The feeling is delightful, of passing easily, without ups or downs or hard lines of any kind, among the noble Cedars and other trees which grow near the house, the lawns dipping down to them. One feels that here, at all events, no system of arrangement has been adopted which prevents the fullest expression of the beauty of the trees and the place, and the greatest enjoyment of those interested in them. The sunken fence in front of the house is certainly too near for such a large building, and the base lines of the house come out of the turf in perhaps too hard and rectangular a manner, as seen at some little distance off. This, however, could be easily remedied by a few low groups of Evergreens, which would break the line we mention, and also serve to intersect the lines of the walk here and there. Beyond this we should say the arrangement was perfection.

This question of an elaborate terrace garden or not is a very important one for all who care for the beauty of country seats. We might mention many places where the most beautiful feature of a place is destroyed by the presence of such a garden. In many country seats the park comes nearly up to the foreground of the house; and rightly so, being better cut off by a sunk fence than by a hard terrace wall. Where this side of the house is left quiet, however, the other side is often embellished with a formal terrace garden, and thus that most precious feature of all is destroyed—the wide garden lawn, on which one can walk or play with comfort, and which, if fairly adorned by trees and flowers, gives the best effect that is possible. Many of our finest places are robbed of their beautiful breadth of lawn by this geometrical garden. A case in point is Castle Ashby, where the best side of the house is occupied by a very elaborate terrace garden. Anyone who doubts the infinitely superior effect of a fine lawn in such a position has only to walk into Mr. Elwes' place in the neighbourhood, and see what a beautiful and simple lawn can do in the way of a foreground, even without such noble trees as are at Highclere.

At Highclere the advantage of the position is well shown by certain types of vegetation not always seen in good condition, as, for example, the Tree Paeony. This is quite at home here, and a noble shrub it is. Then the Pines are superb,

particularly the Silver Fir; and the Douglas Fir and Menzies Fir are almost as remarkable as at Dropmore. The 600-feet elevation or so of the house secures this to a great extent. But not only are Pines particularly fine in their growth from the hilly situation suiting them; deciduous trees are not less so. It was a pleasure to see these noble trees of the Oriental Plane—beautiful trees when seen well developed. The native trees, however, often share with these an undeserved neglect. Here we were greatly pleased with the beautiful effect of a large well-grown Silver Willow—a mass of light glistening foliage played upon by the wind—near a pool. The wild Service Trees are very fine here, and give another example of the neglect of native trees.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 12.

THERE was a comparatively small number of exhibits submitted to the committees on this occasion, although the conservatory was quite filled by the cottagers' and artisans' show of fruits and vegetables, which was by far the most extensive that has been held this year at South Kensington. First-class certificates were awarded to—

IXORA WETII.—A new, beautiful, and distinct seedling variety, a real acquisition in every sense, inasmuch as it lacks nothing in point of good habit, floriferousness, and other essential qualities belonging to a good *Ixora*, while the colour is quite distinct. The flower buds are of a beautiful rose-pink, while the opened flowers are a delicate blush; the trusses are large and freely produced. Exhibited by Messrs. Veitch, in whose nursery it has been raised.

LÆLIA ELEGANS SUPERBISSIMA.—A splendid variety of the well-known *Lælia elegans*, having flowers fully twice the ordinary size. The sepals and petals are of a delicate mauve, while the broad labellum is of an intensely rich and deep magenta-crimson, frilled at the edges and white in the throat. A fine specimen of this superb Orchid was shown by Messrs. Sander & Co., St. Albans.

TIGRIDIA PAVONIA ALBA.—The lovely white variety of the Tiger Flower, of which a good illustration was given a short time since in THE GARDEN. On this occasion it was shown both by Messrs. Cannell & Sons, Swanley, and the New Plant and Bulb Company, Colchester, to both of whom certificates were awarded.

BEGONIA MADAME ARNOULT.—A double-flowered tuberous-rooted variety of great excellence. The growth is sturdy and dwarf and extremely floriferous. The flowers form perfect rosettes from 2 inches to 3 inches across of a soft and clear salmon-rose tint, quite worthy of the distinction which was unanimously accorded it. Shown by Messrs. Cannell & Sons.

GLADIOLUS LADY CARINGTON.—A most beautiful variety, the perfection of an ideal Gladiolus. The spike is long and massive and beset for fully two-thirds of its length with expanded blossoms, which are unusually large, of thick substance, and of the most delicate rose-pink imaginable, streaked here and there with carmine. Exhibited by the raisers, Messrs. Kelway & Son, Langport.

MONTBRETIA ELEGANS.—A new hybrid variety apparently midway between *M. Pottsi* and *M. crocosmæflora*, also a hybrid. The flowers are expanded, as in the last named kind, and are brighter in colour. Shown by the New Plant and Bulb Company, Colchester.

COLEUS COUNTESS OF DUDLEY.—A handsome variety, abundantly distinct from the hosts of varieties of *Coleus* now in gardens. The large broad leaves are creamy white, veined and edged with bright green. Shown by the well-known *Coleus* raiser, Mr. J. King, Rowsham, Aylesbury.

HIBISCUS TRIONUM.—Specimens of this beautiful old annual Mallow were shown by Messrs. Cannell under the name of *Malva Knelleri*. The large bell shaped flowers are straw coloured with

a conspicuous black blotch in the centre of the flowers.

The following are the more noteworthy of the other plants exhibited. A very fine flower-stem of the Swamp Lily (*Lilium superbum*) was brought by Mr. G. F. Wilson from his wild garden at Oakwood, Wisley. The stem was 9 feet high, and the numerous flowers it bore were of an unusually high colour. Mr. Wilson also showed a fasciated stem of the same Lily, almost as tall. It bore a large number of flowers, but paler than those of the tallest specimen. These fine examples were grown in a deep vegetable soil in a shady wood. A long flowering shoot of *Passiflora quadrangularis* was shown by Mr. Goldsmith, Hollenden Park, Tonbridge. There were no fewer than six expanded flowers on a length of shoot not much over a foot in length.

Messrs. Veitch's exhibits included *Curcuma sumatrana*, a species in the way of *C. Roscoeana*, but with large bladed leaves with long dark petioles; the bracts are purple and showy. *Rhododendron Crown Prince* of Germany, also shown, is one of the finest of the now numerous hybrid *Rhododendrons* of the javanicum race. The flowers are large, finely shaped, and of a brilliant orange-scarlet. Mr. De B. Crawshaw, Rosefield, Sevenoaks, showed a good spike of *Disa grandiflora*, and a very pale almost white variety of *Cattleya Eldorado*. A splendid plant of *Cattleya Gaskelliana* came from the New Plant and Bulb Company, Colchester. It was labelled *grandis*, and bore two spikes, one with three and the other with two flowers; they were large and highly coloured—in short, was one of the best varieties we have yet seen. The same firm also contributed a group of choice plants which included *Montbretia Pottsi* and *M. crocosmæflora*, besides a new variety with pure yellow flowers, *Eremurus Olgae*, an interesting and pretty liliaceous plant; *Littonia Keiti*, larger than *L. modesta*; *Tritonia nobilis*, *Scuticaria Steeli*, and some hybrid *Gladioli*. These latter included an extremely dark rich crimson sort named *Enfant de Nancy*, which, if it can be improved as regards size and form, will be a very fine plant.

Among some various sorts of Clematises Mr. Noble, of Bagshot, showed the white *C. Jackmanni* and *Star of India*, undoubtedly a variety of the highest merit, being large and finely shaped, of a rich maroon-crimson, and very floriferous. Mr. Noble also had coning branches of *Abies nobilis* and *Pinus parviflora*, and flowering branches of *Spiræa Nobleanum*, *S. Douglasi*, and *Lindleyana*, all very handsome and desirable shrubs.

A well grown group of plants of the pretty *Statice floribunda* was shown by Messrs. Lee, Hammersmith, and Messrs. Cannell, of Swanley, sent various *Tigridias*, including the charming new white variety. A pretty new straw-coloured *Carnation* named *James Veitch* was shown by Mr. H. B. Smith, of Ealing; it is distinct and may prove of value. A very fine double white zonal *Pelargonium* was shown by Mr. Bealy, Roehampton; it is floriferous and of an excellent dwarf habit of growth; it is named *Blanc Parfait*. Mr. King, of Rowsham, showed several new seedling *Begonias* of admirable habit, and with erect flower-stems and well shaped blooms; they were named *Fair Maid* of Rowsham and *Countess of Rosebery*; also a brilliant leaved *Coleus* called *Earl Dudley*. It has deep maroon leaves traversed by bright crimson and green veins. As usual, at these August meetings, Messrs. Kelway, of Langport, contributed a splendid display of *Gladioli*, of which they make such a speciality in their nurseries. The display numbered no fewer than twelve dozen spikes, all representing the finest named varieties grown to perfection. There were several new seedling varieties exhibited, and among those which were submitted to the committee were, besides *Lady Carington*, which received a certificate, *St. Gatien*, massive spike of a brilliant carmine; *G. T. Miles*, rose-pink, white centre, both of the highest quality. For this brilliant exhibition, which was the centre of attraction, Messrs. Kelway were awarded a silver Banksian

medal. Messrs. Kelway will continue their display here throughout August and September.

The large collection of Dahlias shown indicated that the season of this invaluable autumn flower has commenced. Mr. Turner, of the Royal Nurseries, Slough, contributed a collection of some four dozen varieties, representing a selection of the finest double sorts now grown. A bronze medal was awarded to Mr. Turner and also to Mr. Ware, who had a most attractive array of single sorts, which, set up so effectively as they were in bunches, were much showier than the doubles. There were several new sorts shown, but the finest of the whole collection were those named Buffalo, Negress, White Queen, Lutea grandiflora, Cherry, Ruby King, Beacon, Mrs. Bowman, and General Gordon, the latter a form of the Cactus Dahlia.

Fruit.—There was very little to engage the fruit and vegetable committee. The chief exhibit was a pair of fruits of the Goodwood Melon, which Mr. Rutland brought from the Duke of Richmond's garden at Goodwood, where the variety originated some two or three years ago. The fruits are oval-shaped, very large, and said to be of delicious flavour. The fruits shown by Mr. Rutland weighed 17½ lbs. and 17½ lbs. respectively. A seedling Melon was shown by Mr. Wiles, of Edgecote Park, Banbury; and Mr. Herbert, of Richmond, showed a fine basketful of King Humbert Tomato, which was considered to be identical with the Chiswick Red variety.

COTTAGERS' GARDEN SHOW.

If the productions of cottage gardens may be judged by the material exhibited in the conservatory at South Kensington on Tuesday last, a favourable opinion must undoubtedly be formed of the cultural skill of both cottagers and artisans, for without doubt the bulk of the productions in question would have compared advantageously with those that we are accustomed to see shown by professional gardeners. It would perhaps be saying too much if we stated that all the produce exhibited came direct from *bona fide* cottage garden plots, for this term possesses an elastic meaning, but doubtless the bulk of it was furnished by those who cultivate their gardens in their leisure time. The show seemed to surprise everyone not only on account of its excellence, but its extent. An idea may be formed of the display when we state that the entries numbered no fewer than 770. The exhibition was in no sense a local one, inasmuch as the exhibits came from widely separated parts. For example, one exhibitor, and a successful one, too, sent produce all the way from Dingwall, in the very north of Scotland, while in the extreme south there were some from Dorset, and from Buckinghamshire in the west, and Norfolk in the east.

The schedule was admirably compiled; it was so arranged that cultivators, whether owners of large or small plots, might have a chance of exhibiting. The number of classes was thirty-six, and all without exception were represented more or less numerously. It was a capital idea to set apart six valuable prizes for collections of garden produce for competition amongst the various local horticultural and cottage garden societies and allotment holders in the country. The secretary or other person authorised, of the society competing, was to collect produce from its members, make necessary arrangements, exhibit in the usual manner, and to guarantee that the produce was *bona fide* grown.

The collections were to consist of fruit and vegetables—not less than six kinds of fruit and twelve kinds of vegetables, and were to occupy a space not exceeding 60 square feet. The prizes offered were £5, £4, £3, £2, £1, 10s. 6d. One would have thought that such prizes would have brought out a large competition, but such was not the case, there being only three collections shown, but these were uncommonly fine, particularly that to which the first prize was awarded. This came from the Petworth Garden Committee, represented by Mr. W. Jacob. This was an extensive collection, number-

ing about half a hundred dishes of fruits and vegetables. The fruits were excellent, all hardy, and amongst them Jargonelle Pears were particularly conspicuous for their excellence, being probably gathered from a warm wall. This Pear succeeds admirably about Petworth. Then there were first-rate Gooseberries, Currants, Plums, Raspberries, and Apples, and among vegetables there were some really high-class productions. The Northam Horticultural Society showed the second best collection, also a good one, and a commendable display was made by the Bromley Society for the third prize. This comprised the first class; then followed classes for collections of six kinds of vegetables in which there were twenty-six competitors; for four kinds, of which there were twenty-nine exhibitors. Four classes were set apart for Potatoes, and an extensive array there was. Thirty-three showed sets of three round kinds and the same number of three kidney sorts. There were twenty-six single dishes of rounds and sixteen of kidneys, so from this it may be inferred that the Potato ranks high in the estimation of the cottage gardener. The quality of the tubers was excellent, and a judicious assortment of varieties was evident.

Peas were good considering the season, which has been one of the worst for this vegetable, being so hot and dry. Some of the best therefore came from the most northerly localities. About thirty dishes were shown. Onions were especially good, and the judges had no little difficulty in singling out the best four dishes from the three dozen shown. The classes for Beans, Turnips, Lettuces, Carrots, Beet, Cauliflowers were not remarkable, except for the numbers of contributors, but the Cucumbers were exceptionally fine, and no doubt some of the visitors thought with us that some of those cottagers must have little Cucumber houses, or at least a "little glass" attached to their plots. So, again, with the Tomatoes, which evidently were not open-air productions, and must have been grown against walls. Vegetable Marrows, which, like the Scarlet Runners, are *par excellence* the cottager's strong point in the way of vegetables, were numerous and excellent, and we noticed that the new variety, Muir's Vegetable Cream, has already found its way into small gardens. Coming to the fruits, they were alike as fine as the vegetables. The classes were for Gooseberries, Currants (Black, Red, and White), Raspberries, Cherries (Morello), Plums, and Apricots. All, except the class for Apricots, were numerously represented, and even of Apricots there were three capital dishes shown. In all there were upwards of a hundred dishes of fruit shown, and some of the largest classes were represented by some thirty competitors. Altogether this innovation on the part of the executive committee of the Health Exhibition, combined with the valuable assistance rendered by the officers of the Royal Horticultural Society, has resulted in a signal success, and one, moreover, that is calculated to add a stimulus to the cultivation of fruits and vegetables in small gardens. We hope this may not be the last show of the kind held in London, but we fear that it will be the last this year under the auspices of the Health Exhibition committee.

NOTES OF THE WEEK.

Certificated Peas.—At a recent meeting of the fruit and vegetable committee of the Royal Horticultural Society held in the Chiswick Garden, first-class certificates were awarded for the following Peas, viz.: Bliss's Abundance (Howcroft & Watkins), Magnificent (H. Eckford), and Early Paragon (Sharpe & Co.).

The selection of hardy flowers in the poor mixed borders in the West-end parks is so bad, that we think the rejected rubbish from some nursery where they have awakened to the need of wise selection has found its way to them. We notice poor Rudbeckias, Golden Rods, and other plants which even large places could not find room for if they duly represented the many really fine things which we have.

At Welbeck, Apricot trees on a wall a quarter of a mile in length, and protected with glass, are grand this year. They are said to be such a sight as has never been seen before even at Welbeck, inasmuch as every tree is bearing a

full crop of fine fruit. At Grimston Park, Tadcaster, Morello Cherries on pyramidal bushes growing in open borders are as usual loaded with fruits, while on north walls the trees of this variety neither live so long nor bear so well as the bushes in question do.

Royal Botanic Society.—The forty-fifth anniversary meeting of this society was held at Regent's Park on Monday last. From the report it appeared that the receipts for the year reached £7045, against £6651 for the preceding year, but that the expenditure involved in rebuilding the corridor and greenhouses and in adding to the Palm house had been heavy. The facilities afforded to artists, students, and others desiring information or specimens have been much sought after—745 names of persons holding free admissions being on the books for the year and 48,000 specimens having been given away. The report also stated that an increase had taken place in the attendance of visitors at the exhibitions and evening *fête*, the attendance at the latter being nearly 500 in excess of last year. The council conclude their report by expressing their regret that severe illness and absence from England had deprived the society during the year of the personal assistance of his Serene Highness the prince.

Next year's International Exhibition. The exhibition to be held at South Kensington next year, in succession to the Health Exhibition, is to be one devoted to inventions. The prospectus just issued includes thirty-four sections, thirty-one of which are set apart for apparatus, appliances, processes, and products invented and brought into use since 1862; the rest of the sections are devoted to music. The first section is set apart for agriculture, horticulture, and arboriculture. In this section there will be seven classes, the last two of which will be devoted to horticulture and arboriculture, in which may be shown horticultural apparatus, such as hot-houses, frames, greenhouses, orchard houses, graperies, boiler and heating apparatus, lawn mowers, watering apparatus, tools and implements, pots and plant boxes, garden wirework, chairs, &c., and plant labels. In arboriculture—apparatus, &c., used in forestry, methods and materials for the preservation from decay of trees and timber will be exhibited. This exhibition ought to prove a valuable medium for displaying thoroughly all the apparatus in connection with horticulture, and the exhibition under the head of forestry may also be rendered useful.

BOOKS RECEIVED.

"Field and Garden Crops of the North-western Provinces and Quidh," with illustrations, in two parts, by J. F. Duthie, F.L.S., and J. B. Fuller. Civil Engineering College Press, Roorkee.

Pteris serrulata (A. L. W., Belmont).—A curious variety identical with that known as *cristata*.

Seedling Carnations (R. H. Vortegans).—Good blooms, some being quite worth naming, particularly two sets, one a bright scarlet, the other a deep crimson-red.

Rabbits and Ragwort.—I find lots of dead rabbits with a leaf of common Ragwort (*Senecio Jacobaea*) in their throats and stomachs. Is Ragwort known to be poisonous to rabbits?—H. R. T.

Hyacinthus cardinalis (A. L. W.).—As a rule it is advisable to lift the bulbs of this plant in autumn and replant them in spring. In mild localities where the soil is light and dry the bulbs may be safely left in the ground during ordinary winters.—G.

Grapes (Young Beginner).—The bunch of white Grapes you send appears to be "shanking." The roots probably are in a bad state. From what we can see of the black Grape it is a case of bad setting, but the variety, whatever it be, is apparently of little value. We cannot attempt to name the varieties from the samples sent.

Names of plants.—*Cobham*.—*Catalpa bignonioides*.—*K. A. S.*—*Spiraea callosa*, *Hypericum calycinum*, *Phlox decussata* (variety), *Triteileia laxa*.—*D. Taylor*.—1, *Pavia macrostachya*; 2, *Abies canadensis*; *Ruellia ciliata*, *Erica Massoni*, *Asclepias curassavica*.—*J. W. K.*—1, *Sedum reflexum*; 2, *S. Ewersi*; 3, probably some sort of crucifer; 4, seems to be *Primula cortusoides*.—*J. S. G. H.*—*Lonicera Ledebouri*. Try cuttings in autumn, but it is easier to increase it by layering.—*N. D.*—The Lesser Dodder, *Cuscuta Epithymum*.—*A. Ransome*.—*Gladiolus purpureo-aureus*.—*S. Y.*—*Dendrobium suavisimum*.—*W. F. R.*—*Feather*.—1, *Funkia lanceolata marginata*; 2, *Veronica longifolia*; 3, *Miltonia Regnellii*; 4, *Quamoclit coccinea*; your Muscat Grapes show a case of shanking.

No. 666. SATURDAY, Aug. 23, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

GOOSEBERRIES ON WALLS.

MR. IGGULDEN'S remarks on this subject (p. 81) are excellent. Fine crops of Gooseberries might be grown on walls, and all vacant places on them between the permanent trees should be filled up with them. An east wall suits them admirably, and on walls they can be better protected from birds than when growing in the usual way. By growing Gooseberries on walls two advantages are secured—first, fruit of a size suitable for tarts can be had earlier by a fortnight than on bush trees, a great gain, and the fruit when ripe will keep much longer than that produced in the ordinary way. Rain is thrown off it by the wall coping, thus keeping the ripe fruit dry and preventing splitting and decay. It is unnecessary to cover the trees with wire netting to protect the buds from birds in spring, thereby warding off in some degree rain, which soon renders the trees liable to the attacks of red spider. When the garden here was made some five years ago we planted a quantity of Gooseberry trees of different kinds against the walls in the spaces between the permanent fruit trees. They are now 6 feet high, and every year are completely covered with fruit down to the ground. They never fail, no matter what the season may be. The young wood, which is made freely, is pruned away in summer previous to the fruit ripening, *i.e.*, with the exception of the leading shoots, and this assists maturation by admitting the sun's rays freely amongst the fruit. Gooseberries from walls, we think, too, are of better flavour than those from bushes. Keeping small birds off the buds in spring is a great advantage. Some time before Christmas the trees are pruned, and in doing this we leave as much young wood as possible without overcrowding; other shoots we cut in quite close with the exceptions of leaders, from which we just remove the extreme points. The branches left are laid in quite thickly, say 4 inches apart. We then mix lime, soot, and clay to the consistency of paint; some grease or anything of the kind from the kitchen is then melted over a fire, and to this we add the other ingredients when hot. With this mixture we paint all the branches, covering them completely, buds and all. To some this may seem a troublesome matter, entailing a large amount of time where there are large numbers of trees to operate on, but the results well repay us. Some recommend lime only applied with a syringe, but that does not adhere sufficiently. The frost and rains of winter soon wash it off, but by adding the grease and clay this is remedied. It does not wash off before the trees are safe from the attacks of birds, and with caterpillars we are seldom troubled; if a few make their appearance, a dose of hellebore powder soon settles them. We sprinkle a little powder over the parts affected in the evening, and the following morning we thoroughly wash the trees with clear water applied with the garden engine. This cleanses them for the season. The stems of our trees, too, are never affected by Moss, such as one often sees on trees

not treated in the way described. This we attribute to the annual painting. Our bush trees are also all painted, but we do not summer prune them, as they do not make as much wood as those growing against the walls. They bear heavy crops annually—so heavy as to require supports to keep the fruit off the ground. We dig in a small quantity of manure about the roots once in two years, as we find them to crop and grow well enough without annual manuring. Our Red Currants in the quarters of the kitchen garden we paint in the same way as the Gooseberries. They are trees with a clean stem of about 15 inches long; each tree consists of from six to ten branches, which are kept closely spurred in. The branches are allowed to grow about 6 feet high; by having so few branches to each tree, and pruning the young shoots in summer when the fruit commences to colour, they get plenty of sun and air, which assists the ripening of the wood—a great point in the production of next year's crop. Under this treatment the branches become clothed very thickly from top to bottom with fruit. An advantage gained by cutting away the young growth preparatory to ripening is that the rains clear the fruit of honeydew which sometimes affects them.

E. MOLYNEUX.

Swanmore Park, Bishop's Waltham.

REPLANTING NARCISSI.

HAVING just finished the digging and replanting of some thousands of Narcissus bulbs of kinds many and various, I wish to say a few words on the subject. When I read my paper at the Daffodil Congress at South Kensington I stated that the best time to replant Narcissus was in June, July, and August, by which I meant that July was in the main the best and most proper season. Our operations this year have corroborated once more the impressions I have long held. In July, as a general rule, Narcissus bulbs are just so many cricket balls—that is to say, both tops and roots have withered away, and you may remove and replant them at once without the slightest fear of injury. In Holland, I believe, the rule is to dig bulbs of nearly all kinds every year, and Narcissus growers at home may follow that plan with advantage whenever increase of stock is a desideratum, as well as the annual flower harvest. If, on the other hand, flowers only are desired, clumps may be left for three or four years at least unmoved without injury. What I am most anxious to make clear to amateurs, however, is the great central fact that if Narcissus bulbs are dug in July and at once replanted, they will flower quite as strongly, even if not actually more so, as if left in the ground unmoved, and that in addition bulb increase and bulb growth are alike improved upon by this judicious removal. On the other hand, if, as now happens very frequently, the bulbs are dug up in July or August, and are then dried and tossed about in the shops until say October, November, or even December, the bulbs are weakened so much that good strong bloom the first season after planting is quite out of the question. I am convinced that Narcissus bulbs cannot be dug too early after the last week in June, nor can they be planted too early after they are dug. Drying off the bulbs and keeping them out of the hands of the grower until late in autumn, as is now the rule, is a most pernicious system. Drying off bulbs is almost a necessity for trade purposes so far as Dutch growers are concerned, but for all hardy bulbs

grown at home it is not so; and when once amateur growers and large bulb buyers recognise the fact that a Narcissus bulb cannot be too soon replanted after it is dug up in July, then and then only may we hope for a trade to spring up in fresh, *i.e.*, newly dug, bulbs. In too many cases the bulb salesman is only a middleman, and all he cares about is to buy as cheaply and to sell as dearly as he can; but if amateurs are wise, they will first make sure that the bulbs are grown by the man with whom they deal; and secondly, they will insist on having their orders executed as they themselves desire, when, as in the case of Narcissi, it is fairly proved that the early (July) planting of freshly dug bulbs is the best practice. I here confine my remarks to Narcissus bulbs, but the principle here alluded to is applicable to many—indeed, to most—other *bona fide* hardy bulbs, by which I mean those which exist from year to year in our northern and midland climate without protection. I shall be glad to have the opinion and experience of other observers in this matter, but personally wish to say that I am totally opposed to the usual custom as now practised of drying off hardy bulbs and keeping them out of the ground months after the proper time of planting. I was speaking to a large bulb grower on this point the other day, and dug up some Narcissus bicolor Horsfieldi roots to convince him that at one particular season a Narcissus bulb lies in the ground without a living leaf above or a root alive below. That time is, as I have said, between the limits of June and August, some species being earlier and some later than others, but, as a rule, the proper time is in July. After the Narcissus Congress one or two growers took exception to my statement that July was the best time for lifting the bulbs, and a kind of informal committee was the result, and some little discussion on the matter took place at South Kensington in one of the arcades. There were present Messrs. Barr, Krelage, Perry, Walker, Wallace, and myself, and the result of the discussion was confirmation in the main that my statement was right. One gentleman threw a little light on the matter by saying that in Holland the bulb growers only dry off the bulbs intended for the English market, adding that the stock bulbs were at once replanted. In a word, all my observations and experience go to prove that the drying off of Narcissus bulbs is wrong, and that late planting is also wrong in practice, and the question now is, how long these two errors are to remain unremedied. I am sure that in the end both amateurs and the trade will be alike benefited—the one by ordering and the other by supplying freshly dug Narcissus bulbs in July.

F. W. B.

Lemoine's hybrid Gladioli.—Some years ago M. Lemoine, of Nancy, raised two hybrid kinds of Gladioli by crossing *G. purpureo-auratus* with one of the highly coloured seedlings of the florist's race. The result was *G. Lemoinei* and *G. Marie Lemoine*, both figured in *THE GARDEN*, Vol. XVII, p. 306. Since then others have made their appearance, none more beautiful perhaps than *G. Enfant de Nancy*, a rich dark crimson form now in bloom with us, and exhibited at South Kensington last week. These varieties are quite distinct in growth, hardness, and in blossom from the ordinary kinds of Souchet and Kelway, and should never be compared with them. Mr. W. E. Gumbleton, of Belgrove, Queenstown, has made quite a speciality of these new varieties, and certainly they merit attention, being perfectly hardy, and so far of rapid increase also. John Thorp, Zélie (Deliul) Ville de Versailles, and Christophe Colomb are also now in bloom there, and flowers I have just

seen of another new form (W. E. Gumbleton) are very fine in shape and colour—a deep rose flake with purple blotches on the side lobes, which are also flecked with white. Being most elegant in habit, perfectly hardy, and distinct in form from the ordinary kinds, they will henceforth be highly prized by all lovers of hardy flowers.—F. W. B.

WATERING IN DRY WEATHER.

TREES AND SHRUBS.—In 1868-9, both dry seasons, many of the forest trees suffered severely and some died, and I more than suspect that not a few trees and shrubs date their decay from that season. Rhododendrons drooped severely, being shallow rooters, and the wonder was that they did not die outright; but our experience that season convinced us that the Rhododendron is more tenacious of life than most shrubs. Although the leaves fell off and the bark withered in some cases, I do not think we lost one Rhododendron from drought. Isolated bushes suffered most; where growing in dense shrubberies, where the fallen leaves had not been cleaned out, the top suffered much less. Any choice trees or shrubs whose roots are near to the surface should be first thickly mulched and then watered. The mulching should be from 2 inches to 6 inches thick. Where this is put on, one good watering will keep the tree safe. It is astonishing to what degree evaporation is arrested by mulching, and how long the ground remains moist. Here, at the present time, everything is suffering from drought, the ground being unusually dry, except where Strawberries are growing. These, being mulched in spring, have received no artificial watering since, and the soil about them is quite moist up to the surface. Wherever mulching can be applied, therefore, let it be given, and then water once copiously, and oftener if required. Tree and shrub roots are deep, and a good soaking is required to reach them. Another advantage of thick mulching previous to watering is that the mulching holds much water in suspension like a sponge, and parts with it slowly to the soil, thus moistening it more effectually than if the water had been poured on the bare surface, in which case much of the moisture is soon lost through evaporation.

IN YOUNG PLANTATIONS of trees and shrubs the Grass usually grows strong at this season, robbing the soil of both moisture and nourishment, and a good plan is to cut the Grass with the scythe, and leave it on the ground. The effect of this is good, as the cut Grass, if scattered roughly, completely arrests further evaporation, and in the end decays and disappears like any other manure. In all cases where rough weeds or coarse Grasses are cut down among young shrubs and trees they are much better left lying on the ground.

CARNATIONS suffer from drought sooner than many other subjects, the roots being numerous and near the surface. The stems droop and turn yellow, and the flowers refuse to open. The Carnation likes a cool soil. Leaf-soil scattered in among the plants works a miracle almost, if one good watering is given at the same time; and whenever possible Carnations should be mulched in warm, dry soils. Where the plants are allowed to grow in masses and cover the ground with their own foliage, the latter acts as a protection itself; but plants put out of pots, being usually isolated on bare soil, soon suffer unless mulched and watered.

HERBACEOUS BORDERS AND BEDS, being usually filled with a great variety of subjects, suffer from drought severely, particularly the shallow rooting species and such as root freely, like the Phlox, which is a gross feeder, soon impoverishing the soil near and sucking the moisture out of it like a crop of Peas. The best plan is to mulch such borders with rotten leaf-mould or Cocoa-nut fibre refuse early in the season, either of which will keep the soil moist without watering, if put on annually 2 inches or 3 inches deep. Cool moisture loving subjects, like the herbaceous Spiraeas, Violas, Pansies, and most alpine subjects, should be mulched by themselves if the whole of the ground cannot be covered. A good covering of

several inches of leaf-mould or short Grass will often save the lives of any of the Viola family, and also Calceolarias, both of which have already shown symptoms of going off earlier than usual. Here Pansies and Violas are most uncertain if not mulched, and watering without that seems only to work greater injury, causing the soil to cake and crack in a few hours afterwards, unless the watering-pot is followed immediately by the hoe, which is not always convenient—mulching prevents all this.

FLOWER BEDS.—All flower beds suffer in dry seasons, and especially bedding plants, whose roots are always necessarily near the surface. The evil is greatly increased by careless planting, as if the roots are not let in deeply, as can be done in the case of many things from seed beds, the tops are sure to suffer from a few days' drought even. Still, frequent waterings should be avoided; a good soaking once a fortnight is sufficient if the surface of the soil is stirred the day following or mulched, but mulching is objected to on flower beds if not covered in some way, as the birds are sure to scatter the litter all over the ground.

KITCHEN GARDEN CROPS.—Both Strawberries and Raspberries will need copious waterings if the roots have not been mulched early in the season, particularly Raspberries, which love a cool, moist soil. We always thickly mulch Raspberries, and although the rainfall has been less than in almost any other part of the kingdom during the last two months, we have not had to give water till now, although elsewhere the soil is so dry, we have had to water it before digging and again after sowing or planting. This is an excellent plan in a dry season, as after a long drought the soil gets so dry on the surface, that to dig it over with the spade, turning the dry soil to the bottom, is to almost insure failure, unless copious rains set in immediately. By watering first and digging after a moist tilth is provided. As to vegetable crops, they, as a rule, do little good in very dry seasons. Cauliflowers button at an early stage, and are useless. Turnips run to seed; so do Celery, Lettuce, and other things, and the quality of all is impaired. The only vegetable that does better the drier and hotter it is is New Zealand Spinach, a most invaluable vegetable in dry seasons, affording a plentiful supply of large, succulent leaves when common Spinach cannot be had, unless sown about every two weeks in very rich soil and well watered, as it runs to seed immediately, producing few or no leaves. Mulchings, even if thin, should be scattered roughly over the soil among all crops during drought, and there is hardly anything so handy as short Grass, which, being light and easily applied, may soon be made to cover much ground, and it will reduce the necessity of watering at least fifty per cent., so that there is no comparison between the two as regards labour. Water should be applied always after the mulching is put on.

J. S. W.

DUTCH MARKET GARDENS.

In the neighbourhood of Amsterdam there are over 150 market gardens, in the greater portion of which such kinds of vegetables as it is usual to forward under glass are grown, whilst some are devoted exclusively to Haricot Beans, Cabbages, and other things commonly cultivated as field crops. The Dutch market gardeners are a laborious, painstaking class, but, seldom journeying far from home, are wedded to old ways, some of their appliances being of a very primitive description. Thus, for instance, the sashes of their frames are glazed with small squares bedded in lead, just like the old-fashioned casement windows, a fact which seems most strange, seeing that that style of glazing garden frames has for many years been quite obsolete in European gardens generally. The frames themselves are of a rough description, being formed of thick boards, being generally some 80 feet long, and divided into compartments at need. Where ground is so valuable, space is naturally economised as much as possible, there being but about 1½ feet between each row of frames. Each market garden is surrounded by

hedges and divided into two or several portions by screens or transverse hedges. In a level country like Holland, where there are but few natural breaks to the fury of the winds, some such kind of artificial protection is almost indispensable, and especially where a large number of glass frames are employed. One or more of these compartments are occupied by the dwelling house, sheds, cellars for vegetables, and frames; the remainder are devoted to the various kinds of crops which may be made a speciality of. Some growers use as many as 2000 lights, from which three or four crops are taken annually. Thus at the commencement of the year they are filled with Carrots, Parsley, Chicory, Sorrel, Leeks, either seedling or autumn-sown plants, Lettuces for cutting in a young state, Turnips for the sake of the stalks, Celery and Lettuces sown thickly to be used as thinned out and for hearting. No heat is applied to such things at that time of year, the frames being merely a protection against the rigorous winter climate, which, as in Germany, does not allow of the enjoyment of fresh green vegetables from the open ground at that time of year. Cabbages, Turnips, Celery, and such like must all get some protection, or they are liable to perish wholesale. This accounts for the disparity in numbers between those who use glass and those who grow in the open air exclusively, for whilst there are nearly 150 market growers in the neighbourhood of Amsterdam, very few of whom have not less than a thousand frames in use, there are not twenty who practise field culture. It will thus be seen that such a quick rotation of crops by frames is practicable; they are indeed never empty, being employed in winter for the storage as it were of such things as cannot bear a Dutch winter, in spring for hastening salads and other things, and in summer for Cucumbers principally. The growth of this esculent indeed forms an important industry in Dutch market gardens. The summer climate is propitious, being just about as much warmer as it is colder than ours in winter, so that with generous culture heavy crops are obtained with regularity. Many of your readers will be acquainted with the "Dutchmen," as the Covent Garden salesmen call them. These are Cucumbers of medium size, rather rough in appearance, but of fairly good quality, and which may be bought during the summer season wholesale at from 9d. to 1s. 3d. per dozen. They are very superior to the ridge, but inferior to English frame fruit; they seem, indeed, to be exactly intermediate between the two, and are a selection from the former or a cross between some frame kind and the ridge. Whatever may be the origin of this Cucumber, it admirably suits the Dutch market growers, being hardy, vigorous, and free-bearing. Were it not for these "Dutchmen," home-grown Cucumbers would realise higher prices, but they come into this country in such a quantity as to considerably lower the value of home-grown fruit. The winter crops above alluded to are followed by Carrots, salads, Radishes, Leeks, Celery, &c., which are brought along on hotbeds. Cauliflowers are also transplanted, one plant being put under each square of glass. Some of the Lettuces are cut young; the Celery is pricked out when large enough. Other Lettuces are placed far enough apart to allow of full development, a considerable portion of the frames being devoted to this esculent. In the meantime other frames are being prepared for the Cucumbers, the seeds being sown in the middle of each light where they are to grow—an excellent plan, as I myself have had abundant proof. Others are used in the same way as soon as they are free, so that by the beginning of summer quite two-thirds of the frames are full of Cucumbers. As each market grower has on an average 1500 frames, and there are some 150 of them in the neighbourhood of Amsterdam, it will be seen that in that district alone about 150,000 frames are devoted to Cucumbers. No wonder, then, that our markets are filled with Dutch Cucumbers at this season of the year. Melons are also grown, but not to the same extent, as they are not so remunerative. When the Cucumbers are sown the remaining

space is filled with Spinach, Radishes, Carrots, Sorrel, Purslane, Chicory, &c., which is taken off in time to allow of the development of the Cucumbers. Transport is effected by means of boats, which are loaded up in the washing sheds situated on the borders of the canals, and which are towed to market by the workmen. Between two and three thousand boats annually discharge their cargoes at the quays. As is the case in the Paris market gardens, the great proportion of the work is done by the family of the occupier, the wife and children washing and preparing the vegetables for market, but in the busy season the largest gardens occupy some half a dozen labourers. Large as the amount of vegetable produce grown by the market growers in the neighbourhood of Amsterdam is, the supply does not suffice, over 2000 boatloads annually arriving from other districts. These contain Cauliflowers, Carrots, Onions, Turnips, Haricots, Potatoes, and fruits, not including nearly 100 boatloads of Strawberries. J. CORNHILL.

Byfleet.

PLANTS IN FLOWER.

Montbretia crocosmæiflora.—A clump of this 3 feet through is now in flower in the New Plant Company's garden at Colchester. Dr. Wallace says it is very handsome when seen in a mass.

Ficotee Painted Lady.—Some blooms of this strikingly pretty variety have been sent to us by Mr. Bedford from Straffan. The petals are of a pleasing flesh-pink on the upper surface and nearly white beneath. It is, we believe, a very old variety, but nevertheless one that should be grown.

Seedling Carnations.—I herewith send you some seedling Carnations just as cut from the border. Kindly let me know what you think of them.—D. A. McIVER, *Phantassie Garden, Prestonkirk.*

* * * They are very pretty and varied in colour. Why not try to raise a good yellow border Carnation, or break out into new and distinct races? Some of the flowers you send represent very fine sorts, quite worth naming, particularly the self-coloured kinds, such as those numbered 10, 26, 19, and 6.—ED.

Echiopsis Ritro.—This is one of the few plants that seem to thoroughly enjoy dry, warm weather. They have never seen it finer than it is this year in light sandy soils. In Mr. Stevens' garden at Byfleet there are large plants of it covered with bright purple heads of bloom which have a fine appearance. Another plant with which the warm weather also agrees is *Eryngium amethystinum*, which is likewise flowering profusely at Grasmere. Some of the plants of it are quite aglow with bright colour which shines in the sun like blue burnished steel.

New white Ipomæa.—Some flowers of the new *Ipomæa Thomsoniana*, sent to us by Mr. B. S. Williams, from his nursery at Upper Holloway, show admirably what a lovely addition to stove climbing plants it is. The flowers are snow-white, and similar in size and form to the well-known *I. Horsfalliæ*; indeed, it may be best described as a white-flowered variety of that species, inasmuch as it resembles it in growth, and is said to be quite as floriferous and easy to grow. Such a lovely white-flowered stove climber is, indeed, a valuable acquisition, and no doubt it will not be long before it becomes popular.

Kniphofia grandis.—This at the present time is one of the noblest of hardy perennials, and for some weeks to come its tall, stout stems, surmounted by massive clusters of flame-coloured flowers, will prove very bright and effective. It is now beautifully in flower in Messrs. Barr's grounds at Tooting. Rightly placed in a garden, this plant has few rivals either in stateliness or brilliancy. It is seen to best advantage in front of a group of evergreen shrubs in a retired nook with a foreground of Grass. In such a position its colour stands out in relief and lights up the whole surroundings. It is known also as *Tritoma grandis*, but *Kniphofia* is its correct name.

Ceropegia Saundersi.—I send you flowers of this plant. It has laid hold of a *Maréchal Niel* Rose, and grown at least 8 feet since March. It likes shade evidently and to be cool at the

roots, because the pot stands at the opening where the Rose is brought from the outside. This is one of the curious plants which the late Mr. John E. Daniels, of Epsom, loved to grow, and from whom I had it. It is also interesting, being one of the subjects experimented upon by Darwin, and noticed in his "Movements and Habits of Climbing Plants."—J. WOOD, *Woodville, Kirkstall.*

* * * A very curious flower having a Mushroom-shaped cover over the tube. The whole flower is pale green, blotched and mottled with a brighter shade of green.—ED.

Robinia Pseudacacia semperflorens.—This variety of the False Acacia is aptly named, inasmuch as it is the most continuous flowerer of all the varieties; indeed it blooms from early summer until autumn without intermission. On this account it is a most desirable tree, and one which, when in perfection, has a highly ornamental appearance. The foliage is of the same light feathery character as the typical form, but a brighter green. The flowers are white, and hang in drooping racemes round the foliage. A fine example of it is among the most attractive objects just now in Mr. Joseph Stevens' garden at Grasmere, Byfleet.

Carnation Pride of Penshurst.—A good yellow Carnation is a valuable acquisition, even among the plethora of varieties which we have now in cultivation. One of the best of the few yellows we have seen is that named *Pride of Penshurst*, which was raised some sixteen years ago by Mr. Bridger, the gardener at Penshurst Place, Kent. The colour is soft primrose-yellow, a colour that harmonises so charmingly with crimsons and reds. The flowers are of moderate size, full of petals, and abundantly produced in succession from the first week in July to the last week in August, and by growing the plants under glass Mr. Bridger cuts blooms from Christmas until flowers are produced outside. It is a sturdy kind, and has the reputation of being a free grower. We hear that Mr. Bridger intends to distribute this beautiful Carnation during the coming autumn.

Trichinium Manglesi.—A batch of healthy little flowering specimens of this Australian Everlasting may now be seen in the Cape house at Kew. We learn that the treatment adopted for this plant at Kew has been somewhat different from what is generally recommended, and more in accordance than usual with the conditions under which it grows naturally. A plant which grows on the dry sunny plains of Australia does not seem capable of thriving under treatment such as one gives *Pelargoniums*, and yet it is under such that the plants above mentioned have been grown. A mixture of loam, sand, and cow manure, plenty of water, and a position in a cold frame with the sun shining upon them all the summer, are what are found to constitute suitable treatment for this *Trichinium*. The fluffy heads of variegated flowers are pretty little ornaments when seen on the plants, and when cut and placed in water, or even dried, they are well worth employing for the decoration of rooms, &c. The dry sand treatment for this plant must now, we think, give place to that just recorded.

Bougainvillea glabra.—We have on several occasions noted the fine specimen of this plant which flowers annually in great profusion in the conservatory (No. 4) at Kew. The cultivation of this, one of the most ornamental climbers which we have, is too frequently attempted in a house much warmer than the requirements of the plant demand, and consequently anything like success in its management is often thus rendered impossible. The best flowered plants we know of are treated as greenhouse climbers, and if the nature of this species is properly comprehended, and its seasons of growth, rest, and flowering paid attention to, it is always much happier when thus grown than when treated to the warmth of a stove. The Kew plant is growing against the south-east end of a tall greenhouse, where it gets all the morning sun. It is planted in a bed of loamy soil, and during the growing season this bed is frequently

well watered, a little liquid manure being administered now and then. When growth is completed water is withheld, and a most profuse crop of richly coloured flowers is soon the result. After flowering, the shoots are pruned in severely, and the plant is allowed to rest through the whole of the winter months. For *B. spectabilis* a different regime is necessary, but even with the most careful management this species, one of the finest when in flower, is often a failure.

Pereskia Bleo.—*Pereskias* are supposed to be chiefly valuable as stocks on which to graft *Epiphyllums* and other plants belonging to the Cactus family, *P. aculeata* being the species most frequently used for that purpose. *P. Bleo*, in addition to its usefulness as a stock for some of the stronger growing *Epiphyllums*, is, however, not altogether devoid of interest as a flowering plant. A large specimen of it in the succulent house at Kew is now bearing terminal bunches of handsome Dog Rose-like flowers, which in appearance are as exceptional amongst Cactaceous plants as is the foliage of the whole of the *Pereskias*, for this genus is the only one in the Cactus order which possesses distinct leaves. The stem of *P. Bleo* is thick and fleshy, very spiny, and arborescent in character. The leaves are like those of *P. aculeata*, but larger and thicker. The flowers are about 1½ inches wide, and are composed of a fleshy green calyx, and a whorl of ten bright rosy petals. A few weeks ago a batch of young plants of this species not more than a foot high bore terminal heads of flowers, and were quite as ornamental as many better known and popular flowering plants. In *THE GARDEN*, Vol. XIII, p. 181, will be found a figure of a second arborescent *Pereskia*, viz., *P. lychnidiflora*, but as is there stated it is neither so vigorous nor so free flowering as that above mentioned. We are not acquainted with an instance of *P. aculeata* having ever flowered in cultivation in this country, although it is treated liberally both at Kew and elsewhere.

The banded Rush (*Scirpus Tabernæmontani* var. *zebrinus*).—Under the name of *Juncus zebrinus*, Mr. Bull distributed from his nursery some three years ago a very distinct looking Rush, the resemblance of which both in habit and foliage to some of the *Juncuses* was so close as to suggest the latter genus rather than *Scirpus* as its rightful position. Last year, however, a plant of it flowered at Kew, and Mr. G. Nicholson pointed out that its floral characters were those of a well-known British Rush, viz., *S. Tabernæmontani*, which is also found in Japan, whence the banded variety was procured. The specific name is so long that we may, perhaps, drop it altogether for garden purposes and call the plant simply *Scirpus zebrinus*. In the bog garden at Kew this plant may now be seen in first-class condition, and it is worthy of note that the specimen here referred to stood out-of-doors all last winter. It is now in flower, the long porcupine-quill-like foliage standing erect some 3 feet in height, and bearing near the top a little tuft of brown flowers. As a suitable plant for a position in the bog garden, or, failing that, for growing in a pot submerged in a tub of water, this variegated *Scirpus* or *Bulrush* deserves to find a place in all gardens. It is hardly necessary to add that the requirements of this plant cannot be furnished, unless it is grown as an aquatic, and, during the greater portion of the year at least, allowed to stand out-of-doors. When first introduced many failed to grow it, owing to its being treated as a warm house "dry land" plant.

Lilium tigrinum splendens.—The last few weeks has been a most trying time for those whose gardens are on a light soil, such as Mr. Stevens', at Grasmere, Byfleet, whose garden is literally dried up; even the strong sturdy perennials which usually manage to hold their own under any circumstances are parched and withered. About the only plants that seem to disregard the drought are the bulbs, and it is pleasant to see how beautiful the various *Lilies* are amidst their parched surroundings. In Mr. Stevens' garden, where *Lilies* of all kinds are grown, by far the finest is the *Tiger Lily* and its

varieties, and of these the noblest and showiest is splendens, which is so much superior to the ordinary form, the flowers being nearly twice the size, and the colour is brighter and richer, and the spotting more profuse and heavier. It is, indeed, a grand Lily when grown to such perfection as the Grasmere specimens are. The light warm soils seem to suit it admirably. There is one stem about 4 feet high carrying over a dozen flowers. Next in point of attractiveness is the double variety (flore-pleno), which also thrives with unwonted vigour. The splendens variety is fully ten days later than the others, as it has only just begun to expand its flowers, while the others are on the wane. *L. auratum* is not nearly so fine this year as usual, but *L. speciosum* promises well for flower in the course of a few weeks. The lovely *L. Batemanniae*, with flowers of a warm apricot tint, is just now in perfection. The stems rise about a yard in height and carry several blossoms, each about 6 inches across. It is among the most beautiful of Lilies, and, moreover, distinct from all others, except *L. venustum*, to which it is superior.

FLOWER GARDEN.

HARDY FLOWER BORDER NOTES.

THOSE who a few years back asked "where were the flower in August and September on hardy flower borders" should see our borders at present. Not so many years ago we had no herbaceous plants whatever, but plenty of bedding out; now our collection fills about half-a-dozen borders 500 yards in length and proportionately broad, and this takes no account of beds and other places containing some thousands of similar subjects elsewhere. My employer has spent more on hardy plants than others have spent on Orchids, and I think with a good deal more satisfaction to all concerned, although the Orchids have not been neglected either.

CARNATIONS are just in perfection in the north now. Notwithstanding the hot weather, some varieties are only opening their first blooms. We have seedlings and named kinds of all sorts and sizes, and from one to six years old, the latter broad masses a yard and more across, producing quantities of flowers that are literally countless. I tried to-day to get an approximate idea of the number of expanded blooms on one old plant, but gave the task up, and still more buds were to open. I never saw Carnations look better in flower and foliage, but to know what a Carnation is really like when at its best you must have at least a three-year-old mass, then you may cut whole sheaves of flower. Some of our named kinds are about 4 feet high (too tall by half), as they require too much staking. The seedlings are for the most part dwarf.

PHLOXES are the next most conspicuous subjects at present. We got tired of the names of these, as we found many were nearly alike, and some not very first-rate, so we named them according to the colours—crimson, pink, white, purple, rose, lilac, magenta, and so on, and then we knew what we were planting, and how they would look. What a rich and varied display these would make alone! It is needless propagating Phloxes by cuttings; divide the roots and plant in good soil if you wish for good heads of bloom. The manuring of our herbaceous borders is a consideration now, and hence they get very little, and when they get that it is only a mulching in November of some waste soil or manure. Yet everything is strong and looks well.

DELPHINIUMS began to flower in June this year, and still produce later side sprays, but the main spikes are over. They have done well this season, and were never seen so strong and tall, although on the same spot for some years.

GAILLARDIA HYBRIDA SPLENDENS and Coreopsis are fine autumn flowerers, and continue in perfection long and well. The first is not very hardy here, as the roots rot in winter and have to be lifted and replanted in spring. It behaves something like Tarragon if left too long in one place.

Harpalum rigidum has the same fault. This is a fine herbaceous Sunflower, but with us it is quite eclipsed this year by the new types of annual Sunflowers, which are magnificent.

SENECIO PULCHER has turned out to be one of the biggest cheats we have tried, growing stiffly and slowly, and pushing a miserable shoot and a few buds up that never expand—marked for the rubbish heap.

THE NICOTIANA AFFINIS (annual) will, I think, prove one of the very best sweet-scented plants for the hardy garden. In the evening it scents the garden all round near where it grows, and it grows like a weed outdoors in seasons like the present, even in our cool region. I have no doubt it will grow and flower, more or less successfully, outdoors in ordinary seasons in most parts of all the three kingdoms.

MARIGOLD METEOR.—This new and very pretty variety of the common pot Marigold I consider a gem in its way. Easily raised from seed sown out-of-doors it is in bloom in July, and continues to flower in perfection till frost destroys it, and it takes a smart frost to do that. Every plant comes true and double, and is of a pleasing cream colour.

SPIRÆA FILIPENDULA (double).—This is in autumn what the Spiræa japonica is in early summer, only it keeps flowering much longer. I am not sure, however, that the common Meadow Sweet is not quite as good, if not better. Its plumes are taller and larger, and it is a true wild garden subject. I landed in a grand patch of this lately when fishing in the north on a river-side. The panicles were magnificent in size and purity of colour. It was growing in a deep, damp black soil which must be often under water.

CAPE HYACINTH.—This is another over-praised subject. Five hundred or a thousand of it planted in the mass look well enough, but singly it is not striking to look at. It is, however, hardy enough, even in unfavourable districts.

GLADIOLUS COLVILLEI.—I cannot speak from experience yet of The Bride Gladiolus, which, I suppose, belongs to this section, but if it be as good as the purple Colvillei, as sent to me, and as early a bloomer, it will be good. This Gladiolus has been out here for several years, blooms about the end of June or July, is of a rich crimson-purple and one of the most noticeable plants of the season. It is well worth planting extensively.

PANSIES AND VIOLAS.—These are in fine flower at present. Picking the flowers off early in the season when they are not wanted, and the seed pods as fast as they form later on, helps greatly to prolong the season of bloom and keeps the plants in vigour. Do as one may, however, the named florists' Pansies deteriorate in size and general quality towards autumn; and if allowed to grow and flower at will two years in succession, the varieties are not recognisable. I noticed one very prettily marked variety last year which had originally fine large flowers that had become very little better than the common tricolor of the fields when grown in good soil. Violas have more stamina in them and are more enduring.

THE GENERAL GROWTH of many flowering plants and Roses is this year very fine. I have never seen the foliage of Roses so fine, clean, and large. I have seen leaves lately of the Duke of Edinburgh that were simply enormous. Three point leaves nearly covered the whole of a man's hand and the blooms were proportionately good. There is every prospect, too, of growth being well matured, so that prospects for another year are so far good. S. W.

Importing Lily bulbs.—In answer to Mr. Griffith's request (p. 127) allow me to say that I received from him in March of this year twenty-five *Lilium neilgherrense* roots. Of these I lost only two; the remaining twenty-three are in robust health. Sixteen are going to bloom, and the first bloom will be out in about a fortnight or three weeks. The packing of the bulbs was simply in Moss, and though the package was two months on the road, the bulbs did not appear to have suffered,

being very slightly shrivelled. I think he has hit the right time for removal. Of course something depends on judicious treatment when the Lilies are received.—A. R., Windermere.

SAPONARIA CALABRICA.—This is a plant which possesses the rare quality of bearing with much indifference prolonged periods of wet weather and of drought. Its merits are as conspicuous when subjected to a heavy down-pour of rain as when a fierce dry heat prevails. If sown in September, it will make a fine show of bloom in spring, and successional sowings from the middle of March to the end of May will maintain a display until the late autumn frosts cut it down. I have seen this little Soapwort in full flower, fresh and bright, in mid-November, when with the exception of the common Marigold there was nothing in the shape of a flower to be found in the outdoor garden. Now is a good time to sow for late spring bloom; plants raised now will make specimens 18 inches across by the time they come into flower.—J. C. B.

BORDER CARNATIONS.—These may be grown in any garden in town or country without any further preparation of the soil than digging it well up and giving it a good dressing of stable manure. All soils are not, however, equally well adapted for Carnations. If they incline to be of a clayey character so much the better. Light sandy soils with a gravelly foundation are the least suited for Carnation culture. I have, however, grown them well on such soils by digging or trenching them and placing a good layer of manure in the bottom of the trench. When the plants were put out they were also placed in a layer of loam about 2 inches deep spread over the surface. Soil from a Melon bed just suits Carnations; in fact, we generally utilise the soil that has grown one class of plants for the production of another class. This year we wanted to put out several hundreds of seedling Carnations, and as the ground is of a clayey character, the light sandy soil from pots in which Hyacinths had grown was used to place on the surface instead of Melon soil, which is heavy. Last year I planted in an ordinary herbaceous border some of our best Carnations and Picotees, and they flowered remarkably well without any attention, except that of the most ordinary kind. Florists of old could not grow their flowers so well as we do now, although they took more pains to make up their Carnation beds than some people do to make a Vine border. There are very few Carnations or Picotees that require coddling up in the greenhouse. We grow them in pots to obtain purer and better flowers for exhibition or to produce an effect in the greenhouse, but in any good garden the same plants flower freely and produce useful flowers to cut for bouquets.—J. DOUGLAS.

SHORT NOTES.—FLOWER.

Clematis coccinea (p. 105).—A plant of this grown here under glass was unsatisfactory in colour, being a pale dull red. In the spring it was turned out in an open sunny situation, and the result is that in point of colour it is all that could be wished. Had "J. C. C." done likewise, I do not think he would have discarded it.—J. M., Charnmouth.

Veronica salicifolia.—I am amused at what is said (p. 107) about the probability of Veronica salicifolia doing well here. My poor little garden is so full, I am forced to discard a great many things, and Veronica salicifolia is on the condemned list, though perhaps it does not deserve such treatment at all. It does here well enough and I have had it a long time.—H. EWBANK, St. John's, Ryde.

Ecceomocarpus scaber.—I have a plant of this now well furnished not only with long drooping racemes of blossoms, but also with seed-pods, which are equally pretty. I raised it from seed in the spring of 1883, and it now covers a surface of 20 square feet on a south wall, where it has stood until the present time without the slightest protection. This is of course owing to the mildness of the winter, but still it is well worth growing even if cut down by frost occasionally.—H. O. SULHAM, Newbury, Berks.

A week's growth of Tritoma nobilis.—The measurements were taken in the afternoons. Between the 1st and 2nd inst. it grew 4½ inches; between the 2nd and 3rd, 2½ inches; between the 3rd and 4th, 3½ inches; between the 4th and 5th, 4 inches; between the 5th and 6th, 2½ inches; between the 6th and 7th, 3½ inches; or a total of 24½ inches in six days. The stems are now over 7 feet high, and very noble they look standing amongst and well above the shrubs with which they are associated.—T. SMITH, Newry.

BRODIEAS.

THE variety in height, shape, and colour of hardy out-door bulbs now in cultivation may be said to be endless. In *Liliums*, *Fritillarias*, *Tulips*, and other Liliaceous plants a surprising degree of perfection has been attained, especially in the case of *Lilies*. *Brodieas*, which follow close upon the heels of the genera just mentioned, are also well worth the attention of cultivators. They adapt themselves to the ordinary circumstances of mixed borders with wonderful readiness, and their presence in bold masses during the spring months is most welcome. Most of them increase yearly by means of offsets in favourable situations, and if they do not do so it is a sign that the position is not to their liking. Plant them at first in well prepared light rich soil, so as to give them a fair

stalks from 1 foot to 3 feet or 4 feet long, on which the flowers are produced in umbels; they are about an inch long, somewhat funnel-shaped, of a bright purplish blue colour, and are produced from May to July. It is a native of California, Colombia, &c.

B. MULTIFLORA, also called *parviflora*, is somewhat like the above in general appearance, but differs widely structurally. It has more flowers in a head and also longer foliage. In habit and position generally it may be referred to *B. congesta*. The leaves, which are few, are from 1 foot to 2 feet long and bright green, and the flower-stalks are shorter than the leaves. The blossoms, which are produced in sub-globose heads, are bright blue in colour, the divisions being much shorter than the tube and spreading, and lying

They are bright rose-coloured and very handsome. It is a native of California, and flowers in July.

B. COCCINEA is the brightest and handsomest of all the *Brodieas*. It is also a very distinct kind and a sure and free flowerer. It is not quite so hardy as the other species, but in dry, well-drained borders it holds its own in a fairly creditable way, especially where deep planting is resorted to. It is a most useful bulb for pot culture, and as it is much showier than many of our indoor spring bulbs, it will doubtless prove an acquisition for that purpose. As a cut flower it is charming, so handsomely do the flowers hang over the edge of the glass in which they are placed. The leaves are about 2 feet long, narrow, and bright green. The flower-stalk is about the same height, and bears an umbel of from ten to twenty drooping tubular flowers, each about 2 inches long; their lower half is bright scarlet abruptly tipped with yellow, and the recurved lobes are green. It is a native of San Francisco, and flowers in May and June.

B. GRANDIFLORA is a handsome and useful species, of which there are two or three varieties, notably minor and major. It requires to be planted in quantity in order to render the large umbels of delicate blue flowers effective.

K.

GLADIOLI AT SOUTH KENSINGTON.

THE exhibition of Gladioli at South Kensington on the 12th inst. by Messrs. Kelway deserves more than a passing notice. There were 144 well-developed spikes, most of them good enough to obtain first prizes at any flower show. They were admirably set up and arranged, forming altogether a very important part of the usual bi-monthly meeting. The varieties exhibited were all seedlings raised at Langport, and the spikes had been cut from propagated plants; even the new varieties offered for certificates were of this class. The great difficulty with which growers of Gladioli have to contend is the tendency of the bulbs to degenerate. I was fortunate in raising many seedlings, which obtained first-class certificates, but never was able to show good spikes from propagated plants. In previous seasons Messrs. Kelway usually exhibited spikes cut from seedling bulbs—a course not altogether satisfactory. It was many years before the variety in question could be sent out; by that time other seedlings had been exhibited, and the interest in those shown before became diminished before a sufficient quantity could be propagated for sale. Four new varieties were exhibited for certificates on the occasion just referred to, and the committee selected Lady Carington for that distinction. It is a grand variety, forming a long spike of large, well-formed flowers, pale lilac in colour, with a distinct white centre. Next in order of merit were *St. Gatien*, a showy variety, with brilliant rosy crimson flowers of fine form with whitish marks at the base of each petal; *William Coleman*, rich orange-scarlet with deep purple blotch at the base of the lower petal; *G. T. Miles*, a very distinct variety, with long spikes, the flowers of which were large and arranged in a more upright position than usual. They are rosy red with white lines in the centre of the petals. The general collection comprised some very fine and distinct types, and some of the varieties which were raised many years ago, and are now sold at a cheap rate, are as good in quality as many of the new comers. For purposes of classification, nearly the whole of those exhibited might be placed in three groups or colours.

1. WHITE OR BLUSH GROUND.—*Agnes Mary*, a distinct and handsome variety, white with pale lilac shade, and purplish mark on the lower petal; *Queen Mary*, white with purplish violet stripe on the lower petal; *Damia*, white tinged with pale purple or lilac; *Duke of Teck*, a new variety of this year, blush white with rosy red flakes; *Mrs. J. Eyton*, a very fine white with rose flush, and rosy red mark on lower petal; *Mrs. D'Ombra*, a well-formed flower, white with rosy lilac shade; *Neocles*, white with purple stripes on the petal line segments; *Agdestes*, white with violet blotch on



Flowers of *Brodiea coccinea*; colour crimson (natural size).

start and get them properly established. Mr. J. G. Baker has placed four species generally found under the name of *Brodiea* in the genus *Milla*. They are *M. ixioides*, *M. capitata*, *M. laxa*, and *M. gracilis*, leaving only the undermentioned *Brodieas*—viz.:—

B. CONGESTA, of which there is also a charming white variety, a scarce and very desirable plant; both are perfectly hardy and establish themselves readily without any extra care being bestowed upon them, and as they increase much more rapidly than the others, a very few years elapse ere a large patch is produced. *B. congesta* is also a most useful bulb for filling up low recesses in rockeries, which may be covered with such creeping plants in summer as *Veronica repens*, &c., without in the least affecting the bulbs. It has narrow, slightly glaucous, ribbed leaves and flower-

nearly flat when open. It is a native of California, and flowers early in May.

B. VOLUBILIS.—This is a curious and most interesting hardy bulb. Being of a climbing habit, it ordinarily reaches a height of from 4 feet to 10 feet or 12 feet, its scape or flower-stalk twisting in the most peculiar manner round everything that comes in its way. It is said by collectors to reach in this way enormous heights on trees before the flowers expand. It requires a rich light soil, and should always be planted near a bush, or stakes on which it is to climb must be supplied, otherwise it will dwindle and produce few flowers, and those badly coloured. The leaves are about a foot long, narrow, keeled at the back, and ribbed on the upper surface. The flower-stalk, which is green or pink, is very brittle, and the flowers are produced in umbels of from twelve to twenty.

lower petal, large and handsome; Lord Powis, white with rosy red markings.

2. PURPLE OR LILAC-PURPLE SHADES.—Of these the best were Mr. Derry, pale lilac-purple veined with rosy purple; Electra, pale rosy purple with violet-purple stripe on lower petal; Countess of Pembroke, rich purple flaked with lake; Remus, good in form, a showy bright rosy purple flower flaked with crimson; Lady Cavendish, in colour much like the certificated Lady Carington, but not so large; Helum, violet-purple with deep purple flake.

3. SCARLET, RED, AND CRIMSON SHADES.—The best under this head were Mr. Thornton, fine rich scarlet shaded with lake; Dr. Benson, new, light scarlet with purple centre; Marcianus, deep rich scarlet with darker veins; Pictus, deep red with purple centre; Captain Boyton, reddish with scarlet flakes; Earl of Airlie, orange-red with crimson-scarlet mark on the lower petal; Caliphon, rosy red with darker flakes and a light centre; and Maréchal Bazaine, light scarlet with white lines on the petals. In these varieties the spikes are long, and the double rows of flowers face in one direction. The blooms are also individually large and well formed.

THE GROUND for Gladioli should be prepared early in the autumn if possible. Some people cannot see the importance of this, but if two plots of ground are prepared by trenching in the same way, one in September and the other in November or December, the bulbs will succeed much better on the early-trenched ground than on the other; they will be stronger, of a deeper green colour, and there will be fewer losses. Such, at least, is my experience, and the late M. Souchet had so much faith in the early preparation of the ground for Gladioli, that he used to allow it to lie fallow an entire season, and no doubt it was well turned up to the sun during the summer as well as to the frost in the winter. I used to double trench the ground on which I grew my Gladioli, using manure pretty well decayed. Cow manure is better than stable manure for Gladioli, but I prefer to mix the two together and turn the heap about twice. It is ready for use when it has lain about six or eight weeks. When the ground is dry it ought to be lightly forked over two or three times during winter and early spring. It ought not to be touched when it is wet.

J. DOUGLAS.

WILD GARDENING AT NEWRY.

THE ground about to be described surrounds a piece of ornamental water, and was originally laid down in Grass, which as a matter of course entailed a good deal of labour in the way of mowing, &c. There were also various groups of Rhododendrons and other flowering shrubs, specimen Conifers, and other ornamental trees, and some groups of strong-growing herbaceous plants near the water margin. In forming the garden it became evident that sooner or later the question of economy as regards labour would crop up, and as a beginning in this direction it was determined to do away gradually with as much of the mowing as possible; and it being pretty evident that a wild garden ought to entail less labour and attention than the ordinary mown and sheared and constantly trimmed gardens needed, a wild garden was decided upon. The first thing was to dig down all the Grass; then a few inches of peat soil were spread thereon, and the whole carpeted with Heaths of various kinds, the common varieties from the mountains, as a matter of course, forming the staple of those used. Patches of *Erica carnea* for early blooming were, however, planted here and there, and interspersed with the commoner kinds were nearly every other hardy species or variety that could be got. Spaces of greater or less size, and always irregular in form, were left for the numerous plants detailed below. The garden was formed three years ago, and the ground is now well covered and the plants established. No labour is really needed beyond a couple of weedings or so annually, going over the Heaths with the shears as soon as they have done blooming (no matter when that may be), and a little

clearing away of dead stems in spring before growth begins. The latter are never cleared away in autumn—the usual practice. This is about all the care given, and it would be perhaps hard to find a more charming bit of gardening than this is, or one that affords a more constant succession of floral pictures; in fact, there is not a day in the year on which there is not something or other in flower, and when it is considered that all the surroundings are strictly in keeping—all equally wild—the charm will be the more readily imagined. To begin at a point—say where a little inlet enters—on a rocky point is planted *Iris Kæmpferi* and *Carex pendula* surrounded with Heaths. A little further on a little promontory is covered with different kinds of Bamboo, with an undergrowth of large-leaved Ivies. The Heather in the neighbourhood is interspersed with *Veratrum*, *Andromeda calyculata*, and *Amianthemum muscætoxicum*. There are, moreover, irregular groups of *Rhododendrons* interspersed with *Phloxes*, *Larkspurs*, *Lilies*, *Japanese Primroses*, *Doronicums*, and various kinds of *Narcissi*. Then there is an open glade of Heaths, with *Gaultherias*, small-leaved *Funkias*, *Helianthemums*, *Fragaria indica*, *Saxifrages*, and various *Irises* planted amongst them. Then there is a corner in which stands an *Araucaria* with an undergrowth of *Pæonies* and *Narcissi*. On one side towers up a big specimen of *Helianthus giganteus*, and the heathery carpet around contains the following, viz.: *Kalmia glauca* (things like this are not planted singly, but generally in threes or sixes to make a better effect), *Sedum album*, *Aubrietias*, *Gentiana cruciata* and *macrophylla*, *Pernettyas* of sorts, *Gaultheria acutifolia*, *Spanish Gorse* or *Whin*, *Austrian Briers*, *Lobelia syphilitica* and *L. Milleri*, *Saxifraga hypnoides*, *Helianthemums*, *Funkia cœrulea*, *Sedum palustre*, *Polemoniums*, *Campanula pumila* and *p. alba*, *Viola cornuta*, *Andromeda tetragona*, *Herniaria glabra*, *Inula hirta*, *Claytonia sibirica*, *Campanula persicifolia*, *Funkia Sieboldi*, double white Sweet Brier, *Cotoneaster Hookeri*, *Montbretia Pottsi*, *Iris pumila*, variegated Ivies, *Golden Rods*, *Ferns*, and *Everlasting Peas*. Near the water are tall-growing *Polygonums* and *Silphiums*; then *Rhododendrons*, *Kalmias*, *Azaleas*, and *Andromeda Catesbæi*, interspersed with single *Dahlias*; then come *Cerastium arvense*, *Campanula glomerata*, *Meconopsis nepalensis* and *Wallichii*, *Peach-leaved Campanulas*, *Oriental Poppies*, shrubby *Spiræas*, *Pernettyas*, *Campanula grandis alba*, *Geum coccineum fl.-pl.*, *Spanish Gorse* or *Whin*, *Achillea Millefolium rosea*, *Tritomas*, *Funkia subcordata* and *japonica aurea*, *Sidalcea malvæflora* and *candida*; then a group of *Rhododendrons*, interspersed with *Lilium aratum*, *tigrinum fl.-pl.*—the latter full 7 feet high—and *umbellatum*, *Dianthus superbus* (a free-growing plant for the purpose), *Lychnis vespertina fl.-pl.*, *Astrantia major*. Then a large group near the water is composed of *Phormium tenax*, *Trolliuses* of different sorts, *Hemerocallis flava*, *Ranunculus aconitifolius fl.-pl.*, *speciosus fl.-pl.*, and *bulbosus fl.-pl.*, *Gentiana asclepiadea* and *gelida*, *Cypripedium spectabile* and *Calceolus*, *Telokia speciosa*, *Oriental Poppies*, *Silphiums*, *Polygonum crispum*, *Mimulus cardinalis* (a good plant for the waterside), *Asphodels*, *Betonicas*, and common Musk running wild in moist places. Associated with these are also *Lilium canadense*, *L. superbum*, *Elymus glauca*, *Struthiopteris japonica*, growing most luxuriantly and nearly 6 feet across; *S. germanica*, a very much inferior plant; *Primula Sieboldi* in variety. In half-shady damp spots under shrubs, growing most vigorously, are *Sanguinaria canadensis*, *Lythrum latifolium*, *Pyrola rotundifolia*, *Dondia Epipactis*, *Cypripediums*, *Sarracénias*, *Trilliums*, *Orchis foliosa*, various *Lobelias*, and the little *Bluets* in a well-prepared patch of peaty soil; then come *Ferns*, various *Andromedas*, *Senecillis carpatica*, a good plant with large, smooth, glaucous leaves and spikes 3 feet high of handsome yellow flowers. Near the walk margins are *Azalea procumbens*, various *Cyclamens*, *Orchids*, *Gentians*, dwarf *Rhododendrons*, dwarf *Roses*, &c. On a wet point may be found *Royal Ferns*, *Saxifraga peltata*, *Spiræa palmata*, and sundry varieties of *Erica*. In ad-

dition to the plants enumerated above, many bulbs are interspersed among the other plants, such as *Scillas*, *Crocuses*, *Snowdrops*, *Narcissi*, *Sisyrinchiums*, &c. T. S.

CARNATIONS AND PICOTÉES.

THE article on these (p. 89) with its accompanying illustrations of the so-called ideal Picotée of the florist and of the flower as it actually exists, would be a formidable indictment against florists were it not founded on total misapprehension of the facts of the case. On the late Mr. Glenny, I believe, rests the responsibility for these models or standards, of which you have given us an awful example in the case of the Picotée. A writer in a contemporary, under the signature of "Senex," in the early part of this year, in a paper on "George Glenny and the Horticultural Press," very well expresses the views of florists on the above subject. "Undoubtedly," he says, "Mr. Glenny in his 'Properties of Flowers' gave to the world certain dogmas expressed in wise, concise, and explicit language, but much of this dogma rested upon no philosophical principles, and markedly in several instances Mr. Glenny in his application did utter violence to the truths of Nature. Especially was this instanced in the case of the Tulip, and the Carnation, and Picotée. Who that has access to or can remember the papers by the late Mr. Alderman Hardy (popularly known as Dr. Hardy), published in the *Midland Florist* of 1847, but will remember how completely Mr. Glenny's pretensions to authority were dissipated by the masterly analysis to which his dogmas were then subjected. How inconsistent with philosophical truth and impossible of realisation in Nature they were shown to be. Then with Carnation and Picotée blooms in, I believe, his latest diagram of the perfect Carnation he gave such a picture of intolerable formality, that florists as one man revolted against it. The diagram represented a series of concentric circles of petals, each circle containing the same number of petals graduated in size to the uppermost, with every petal in every circle marked exactly alike, an abomination utterly abhorrent to Nature, such as never has been and never will be." Reproduced as these undesired figures have often been since in all seriousness in nursery catalogues and some horticultural journals, it is, perhaps, not to be wondered at that they have been the means of misleading many as to the florist's aims, and provoked some indignation at what was supposed to be his folly. As a matter of fact, however, these absurdities have been by none more heartily repudiated than they have been from the very outset by florists themselves.

M. R.

Sweet Sultan.—Last summer I saw many very pretty bunches of this in London, and I resolved to grow some of it this season, which I have done, but I like better to see it in handfuls cut than growing. Its habit is only suitable for a rough mixed border. This applies more particularly to the purple flowering variety, the most graceful being the yellow one. Their fragrance, too, which is heavy, would not find favour with many. I do not think I shall grow them again.—J. M.

Phloxes in August.—Just now *Phloxes* are at their best, and most beautiful they are. The season has been most favourable for the perfect development of their leaves and flowers, and the latter are unusually brilliant. Some plants which are raised so profusely about Edinburgh, such as the Pansy and *Viola*, are said to succeed better in the cool north than in the warm south, but there are no grounds for saying anything of the kind about *Phloxes*. With us this has been one of the warmest summers on record, and our *Phloxes* have never been finer. I am quite charmed with them. We have some in the centres of flower beds in the flower garden, others in masses in the pleasure grounds, and more here and there in rows in the kitchen garden, and in all of these positions they have grown well, bloomed well, and produced a striking effect. No flowers, moreover, are

easier cultivated. The soil and manure which will produce a good Cabbage will grow the finest of Phloxes.—J. MUIR, *Margam*.

Lilies in the rain.—It is pleasing to read of and imagine Lilies growing luxuriantly and blooming profusely in the open air, but I fear there is a shady side to their success in this position as well as a bright one. Some time ago we had numerous plants of *L. auratum* and other Lilies blossoming in a south border, and so long as the weather remained sunny and dry they were beautiful, but after the first wet day we had not a single bloom worth looking at. The rain washed the pollen all over the petals, and then the flowers were the most unsightly in the whole garden. J. M.

FORCING THE NETTED IRIS.

THE accompanying little illustration may serve to remind those who wish to have a few potfuls of the charming *Iris reticulata* in bloom at Christmas time that now is the proper season to pot the bulbs. Hardy as this beautiful *Iris* is, it forces well, and fine tufts of it glowing with rich colours and delightful fragrance may be secured for the Christmas table with the greatest ease. The best



Tuft of *Iris reticulata*.

plan is to either buy good-sized bulbs—in fact, the best that can be procured—or dig up some of the best clumps in the garden. In the latter case the bulbs require to be sorted, the largest and best being set aside for potting, the rest replanted in the borders. Five good plump bulbs should be placed a 5-inch pot, using a sandy loamy soil. The pots should then be plunged up to their rims in ashes beneath a cool frame, but they must not be watered until the leaves appear well above the surface, which will be about October, when the pots should be placed in a light frame or house where the temperature would range from about 45° to 50°. This gentle forcing will induce the bulbs to throw up their flowers about the end of December, when the only treatment required is to keep the pots moderately dry and in a cool atmosphere, so as to prolong the beauty of the flowers as much as possible. The forced bulbs should not be treated carelessly after flowering, as they usually are, but should be allowed light and moisture, so as to thoroughly develop their foliage, and when spring comes the pots may be set in the open air until the foliage is quite decayed, when the soil should be kept dry and the bulbs re-planted during next August. The chief point to attend to in forcing this *Iris* is not to allow the soil to become so moist as to induce the rotting of the bulbs before the leaves appear. Neither must the plants be placed in too

great heat, which would result in all leaves and no flowers. G.

NOTES ON HARDY FLOWERS.

CYPRIPEDIUMS.—In going over some pots of hardy *Cypripediums*, it seemed that some of the North American species are not only partial to soils of widely differing kinds, but that the spare stout roots of some refuse to grow in some composts. *C. acaule*, for instance, has a decided preference for a free brown loam, *C. candidum* for a thoroughly decayed vegetable mould. Whilst *C. spectabile* and *C. pubescens* are less particular, all resent hard or rough material in the way of grit; and if the succulent tips of the roots are examined in pot plants, they will often be found black and decayed where they have come into contact with such substances. Even the pot sides will be found to have stopped their progress, and this may possibly be one of the hindrances to healthy pot culture. Another matter I have observed favouring this view is that, in most cases where good growth and flowers have been produced in pots, the roots have made their way over the rims into the Cocoa-nut fibre, which as plunging material covered the rims about an inch. Fortunately, all hardy *Lady Slippers* are more easily and vigorously grown in the open soil, provided a proper start is made. *C. arietinum* and one or two others of the less known North Americans I have not so well tried as the above. When once these Orchids have found proper quarters, I fancy many would be surprised to see their vigour and progress and the amount of atmospheric impurity which they will withstand. They may be looked upon as herbaceous plants, needing at most but a little special culture like Lilies, *Trilliums*, &c.

STIPA PENNATA.—This, though not a flowering plant in the strict sense of the word, plays, where freely grown, no small part in the decoration of our borders; its long awns, "like the feathers of a bird of paradise," are just now fully developed and almost ripe, and the softest breeze causes them to float and sway when hardly another sign of life is to be seen. At all times they have a pleasing and animated appearance, but it is among Carnations where this Grass gives us its best effects; the bright flowers of the Carnations, seen at a short distance off, fanned by a gauzy set of awns about their own height, appear to increased advantage. If cut now, these plumes of Grass may be utilised for indoor decoration until another year's crop is produced; but as soon as cut each spray ought to be separated until it is quite dry, otherwise a number become twisted together, and in two or three days are like ropes, and, of course, quite spoiled.

ANEMONE ALPINA.—This is another desirable thing in its seed state, as is also its variety *sulphurea*. The latter especially has monster shaggy seed heads; some of which I measured were 4½ inches in diameter. Seven of these on one plant have formed an ornament for the past two months, standing quite a foot above the ample and yet verdant foliage. These heads of awned seed are now doing duty in vases, and their effect is unique; but they will not last long, as the seed drops daily, when it is gathered and sown at once. To say nothing of the handsome habit and flowers of these *Anemones*, they are worth growing for their seed heads alone; the feathery substance resembles in colour the more dusky ostrich feather, and the globular tuft is mounted on a stout yellowish stalk.

SARRACENIAS may be hardy enough to exist in the open in our climate, but so far as my experience goes during the past five or six years, it is only a bare existence. Clearly they are not happy, and though they may in their native habitats endure as much, or even more, cold than here, other climatic conditions in this country are against their growth. This seems beyond doubt, for when half dead plants are taken from the open, and given the cool treatment of a frame in summer and greenhouse protection in winter, they do well. I never saw this and allied genera nearly so well grown anywhere as in the Edinburgh Bo-

tanian Gardens. A little house was devoted to them; warmth, humidity, and shade were the existing conditions, which I noted so late as the month of October. Pretty nearly all were well up to the glass, and it was a delightful sight to look up at the crystal-like globules on the Sundews, and to see against the light the venous tints and structures of the *Sarracenias* and other plants. Under glass these are easily grown with the same treatment which is given to good examples of common Maiden-hair Ferns, but if anyone has found out how to make plants flourish that have been out-of-doors two years or longer, the information as to how it has been done would be valuable. My little stock, which has been taken under glass within the last twelve months, is now showing the only healthy foliage that has been produced for several years.

MARGYRICARPUS SETOSUS (the Bristly Pearl Fruit Shrub) cannot be otherwise than a favourite with all who have seen it. Dwarf, evergreen, bright, of neat habit, and carrying its pearl-like fruits nearly the whole year, it claims the notice of all who have gardens, but more especially of those seeking pretty all-the-year-round things for rockwork. In the hands of an expert it may be propagated from cuttings, or it may be layered; but by both methods the increase will be uncertain and slow. A much speedier way has been found out; the one-seeded fruits will germinate quickly in Cocoa-nut fibre. They, however, ought to be dead ripe; but to save the difficulty on this point, a strong plant should be set in a sunny place and have a top-dressing of 3 inches of fibre. As the fruit ripens it will sow itself, and from the fibre dozens of seedlings from 1 inch to 3 inches high may be drawn in July and potted in leaf-mould and sand. These sturdy plants, loving sunshine, may be fully exposed from the hour they are potted, and they grow right away, the strongest bearing fruit the following spring.

DELPHINIUM GRANDIFLORUM FL.-PL., or as we better like to call it, the old double Siberian Larkspur, is one of the rare gems of our gardens, and belongs to the same rank and file as old double Scotch Rocket, *Fraxinella*, double Ruby Primrose, some old Snapdragons, and a few other older treasures. Those who are fortunate enough to possess moderately strong roots of this prince of Larkspurs, numerous and fine as the kinds now are, may, by taking it in hand at once, soon increase their stock. Cut off the tops, wash the roots, and divide them downwards according to the number of crowns, or the knife may safely be sent down the middle of the beheaded stalks; when this has been done, some of the divisions will allow of the knife crossing them, from the number of "eyes" in the lower parts; these may be cut to such short lengths as an inch, and in all cases fibre should be preserved. Some parts, however, may have none, but they will make plants, needing only a little more time. All these root cuttings, some being cut on three sides and both ends, should be treated so as to get them furnished with roots as quickly as possible. Prepare a bed, 9 inches deep, of fine and perfectly clean sand, and if it has been well aired or thinly spread out in the sunshine all the better. Set the cuttings in a row an inch below the surface. Water once thoroughly, and leave them to get every possible ray of sunshine. With the warm August weather, in a week or twelve days there will be a set of new roots on each cutting; but it might be better to leave them another week, when some evening or dull day they should be potted in sand with a little brown loam made very fine. Do not press, but trust more to a heavy watering the next morning to settle the sand. Stand these pots in full sun, but do not allow them to get dry. 3-inch pots will soon be filled with roots, and I prefer to keep them in that size, and have them plunged in dry sand in a cold frame during winter; but air should always be left on. This method has been followed with success for two seasons, and it is now in process with more than ordinary promise. The chief points are to start early and have a clean warm bed to make roots in.

ANDROSACE LANUGINOSA.—This lovely species, perhaps the most useful of the genus, has a straggling habit; this, however, need not detract from its other fine qualities, but may be turned to good account in two respects—viz., its flowering may be invigorated and increase readily made. Each time a flower scape is sent up, twin shoots grow at the base of it, and the common node is rather swollen; these twin shoots in a short time each produce a scape and twin shoots again, and so the plant straggles on. By taking off the leaves at the base of each scape, lancing the underside of the thick joint and putting in a peg, the plant becomes staved, looks neater, and roots from the pegged node. Though this plant does well on rockwork, I prefer to grow it in a deep pan for several reasons. When in a pan of good size, the pegging can be done better than in the harder and stonier stuff in the rockery; then during unfavourable weather it can readily be placed under cover; lastly, under any circumstances, this hairy plant can be kept in better health under glass than elsewhere, from the occurrence of the October fogs until the following February or March, though it is no uncommon thing to bring it through the winter quite exposed.

The North American Bluets, *Houstonia cœrulea*, is a bright little Gentianaceous plant which many fail to keep, and even more rarely is it seen in a green state, a condition in which with care it may be had the whole year round. The finer blue or typical form I lost two years ago, and I have not been able again to meet with what I should take to be the true Blue; a white sort and white with a faint blue tint are more common forms. Can it be that the higher colour is not fixed in plants grown in this climate? Be that as it may, this *Houstonia* is benefited at this season by being closely clipped over, thus checking its almost perpetual blooming propensity and favouring the growth of fresh green tufts. In the case of rather large specimens it will be found a good plan to divide them and replant in sandy loam and leaf-mould, giving copious waterings for a fortnight. Smaller plants, if heavily top-dressed—almost covered—with sand and leaf-mould when clipped over will soon make a green cushion that will endure through severe winters; but if, as is not unlikely, flowers begin to appear in autumn, they should be removed. Under cultivation we seem mainly to require to keep this pretty plant from flowering itself to death. Another free-growing plant that many from some cause have frequently to replace is

CAMPANULA TURBINATA.—The various forms of this have at once a vigorous, but very dwarf habit, and bear numerous cup-like bells. Unless looked after, plants from seed, which is freely produced, spring up about the old root, and, as I believe, run back to the original form of *carpatica*, and so the dwarf varieties are soon overgrown and killed. I have noticed this happen over and over again in the case of strong clumps. We can get plenty of *turbinata* seed, but according to my experience it does not reproduce the true form. It, however, yields some pretty varieties. All that have been raised both from self-sown seed and that received from other sources show clearly in the leaf state *carpatica* features. The lesson we should learn, then, if the same thing happens in other gardens is to keep the desired form clear of seedlings. Of both runners and seed it would be well to keep many other *Campanulas* clear if we could manage it.

LITHOSPERMUM PROSTRATUM.—This favourite "true blue" flowered, prostrate plant is not increased so fast as one could desire. I am not aware that there can be anything done in the way of seed; the trade have more or less success with cuttings, but even when well rooted somehow they transplant indifferently. Some prefer the newest shoots, others the harder wood, but in these cases I believe there is but a mere chance of success. I have no royal method to show, but the plan practised this summer has been by far the most successful of at least half a dozen which I have tried. I took old plants with their long, contorted, but somewhat soft roots, about the

thickness of a penholder, and cut them into 2-inch lengths; these were put round the sides of pots in clean, fine sand, well firmed and settled with water, and plunged in cocoa fibre in full sunshine. The upper ends, which came just level with the surface of the sand, showed stout sprouts in ten or twelve days. So far as this method goes, only those having old, healthy plants can practise it. I find that nearly all the cultivated Borageworts, shrubby and herbaceous, are more easily propagated from what may be termed the crown and top parts of their roots than in any other way.

ACIPHYLLA SQUARROSA.—I do not think Miss Owen will have much difficulty with this on a raised bed of light, but rich soil. A small plant of it was sent me nearly three years ago by the late Mr. Sadler, and although it has been grown in the open and fully exposed from the day it was received, it is now nearly 3 feet in diameter, but has not flowered. I can hardly imagine that the Spear Grass, or Wild Spaniard, can be more ornamental when in flower than in its present state with me, for its hundreds of rigid and glaucous spears render it at once a formidable and handsome object. Seed kindly sent me by Mr. Lindsay has grown well, and the young stock is making rapid growth in a frame, plunged in stable litter.

PINKS and other kinds of *Dianthus*, as well as *Silenes*, *Lychnises*, *Alyssums*, and many other things, are here terribly infested with a grub which burrows between the upper and lower leaf skins, and whilst the bad effects of it are most felt among Carnations, which ought now to be in their best form, and among the rare alpine species of *Dianthus*, which ought to be making their green tufts, the damage appears to be most complete in such plants as have sessile leaves or soft, stout stalks through which and into the stems the grubs can eat their way. It is no uncommon thing to find the tops of plants "heading over," the cause being a grub which has gone down the leaf and eaten a cavity in the stem. The greyish trace these grubs leave on the foliage is a ready guide to their whereabouts, and where the collection of plants is not numerous they may be pretty well kept down by pinching them. Batches of *Dianthus neglectus*, *Lychnis Lagasce*, and *L. lapponica* eaten away by these grubs have been greatly benefited by dustings of wood ashes. These seem to not only dry up the affected parts, but to stop the further progress of the grubs, which evidently are unable to endure such doses of potash. Woodashes got by burning the small wood and prunings collected whilst perfectly dry are quite as handy and cheap as lime or soot, and far less objectionable amongst flowers, and, according to my experience, more effective against slugs, worms, grubs, caterpillars, fly, &c., to say nothing of the easy manner in which they can be washed off the plants by the ordinary use of the watering-pot and their fertilising effects when so washed down to the roots. In short, they are the handiest material one can have ready in a dry state about one's garden. In potting, too, a dash of them loosens and sweetens the soil. I can always depend on woodashes for keeping slugs off such plants as have been freely dusted with them, and this is no small matter. I thank the continued use of them for the appreciable lessening of slugs in my garden. Speaking of slugs reminds me of

EDRAINTHUS DALMATIUS, a plant of which they are most fond. There are, however, two other curious facts I notice year by year in reference to this alpine. It has three distinct flowering periods, and only the midsummer or July flowers are fruitful; but unless the seed is well looked after, the juicy capsules, hispid though they are, will be grazed off by slugs. People seeking for neat, fresh-looking, and distinct hardy plants may be recommended

OTHONNA CHEIRIFOLIA; if only a composite with flowers of the colour so common to its order, they are so clear and finished as to render the plant desirable. I have never seen it have many at one time, three or four at most on a large plant as many years old, but they are very effective. The leaves resemble those of Wallflower in but the

merest outline, though the specific name would indicate greater affinity. They are blunt and nearly round at the apex, and their succulent quality and glaucous, nearly blue colour, give the plant a clean appearance, whilst the cartilage plainly seen round each leaf when young adds to the interest belonging to this plant. Its habit is half shrubby and procumbent. It not unfrequently roots where it touches the ground, but when such branches are severed I have not found them to grow as I expected. Cuttings offer a better (but far from an easy) way of propagating it; the leaves are so arranged that they conduct too much water down the stems, unless the cuttings are so made that the bases of the lowest are quite clear of the soil; those touching it are almost certain to rot and kill the cutting. J. WOOD.

Woodville, Kirkstall, Yorks.

SPRING FLOWER GARDENING.

A DISPLAY of flowers in early spring in addition to those of bulbous plants is now so easily secured, owing to the wealth of early-flowering plants which we possess, that no garden should be without them. They afford a great variety of colour, and supply what bulbous plants need to set them off to advantage—viz., a carpet of spreading foliage. First comes the ever welcome Forget-me-not. The most popular varieties of this for spring bedding are *Myosotis dissitiflora*, blue and white; these are readily increased by division, every piece if dibbled in on a shady border and kept moist making a good plant. Young seedlings should be pricked out 6 inches apart. *Myosotis sylvatica* seeds so freely that there is no need to resort to propagating this in any other way. Wallflowers, both single and double of the German kinds, should be planted out from the seed bed. Of the single early-flowering kinds Harbinger is the best amongst dark sorts, and Belvoir Castle amongst yellows. Pansies and Violas are indispensable, and the easiest way in which to get up a stock of healthy plants is to cut them down close to the ground in June, and in July they will be full of healthy young shoots, which, if divided and re-planted, make fine plants by October. Sedums and hardy *Sempervivums* come in well for edgings, and may be readily increased now by division. Primroses and Polyanthes may be divided and re-planted on shaded borders, and seedlings requiring more room may be transplanted, shading from bright sunlight until well established. Auriculas of the alpine kinds may be treated the same as Primroses. *Silenes* of several kinds may be sown broadcast in seed beds thinly; if thick, they must be re-planted as soon as they are large enough to handle, and the same mode of treatment applies to *Nemophilas*, *Candytufts*, and any of the biennials usually employed for this purpose. Shrubs of various kinds are most useful for furnishing beds. Amongst the best are the gold and silver variegated and green-leaved varieties of *Euonymus japonicus*, *Laurustinus*, *Bays*, *Aucubas*, *Box*, and *Berberis*. Conifers of various sorts, such as *Retinosporas*, *Thujas*, *Cypresses*, and *Junipers*, that are so graceful in a young state, may be procured cheaply in 3-inch pots, and if planted out in good soil, soon make good plants for beds or the centres of vases, but they may be kept in pots and plunged, which is probably the best way, if carefully tended in the way of water at the roots.

J. GROOM.

Melilot (*Melilotus officinalis*) is a capital bee plant. Planted on any waste piece of ground it furnishes late in summer a harvest for myriads of these busy insects. Being a biennial, seeds sown in autumn will produce flowering plants the following season, and if the locality is sheltered the stem will attain a great height. The main stem of a self-sown plant which came up in my garden is over 11 feet in height, and has besides several large flowering-stems springing from the same root. My bees are constantly buzzing merrily round it, and I believe it to be one of the very best honey-producing plants grown. When dry it is extremely fragrant, and, like the Tonquin Bean

and Woodruff, will impart a sweet odour of new-mown hay to linen. — EMILY CULVERHOUSE, *Banstead Downs, Sutton, Surrey.*

Dianthus Atkinsoni was raised from seed by the late Mrs. Atkinson, of Bacton Hall, in Norfolk, about the year 1845. It was given by her to my father, the late Rev. John Nelson, of Winterton, and was named by him. It has been preserved in our family ever since, everyone else having lost it. The only way to keep it is to strike cuttings every year, and to procure cuttings it is necessary to keep one plant at least from flowering at all, and to cut off every shoot that attempts to flower; otherwise it will not make Grass, and the plant is almost sure to die after flowering. I consider it the handsomest of all the *Dianthus* family. — CHARLES E. NELSON, *Winterton, Great Yarmouth.*

Sagittaria sagittifolia fl. pl. (double-flowered Arrowhead). — I have grown this beautiful flowering aquatic on the margin of my pond for many years past, and it has bloomed each summer more or less abundantly, its bloom-spike reminding one somewhat of a gigantic double white Hyacinth, save that the flowers are arranged in more even and regular whorls round the stem than is the case with the Hyacinth. Never, however, till this year, owing perhaps to the unusually warm and sunny summer which we are now enjoying, have the flowers of this plant shown themselves in their full development and beauty, those now open in my pond resembling the flowers of a fully double, pure white Balsam. I do not think this lovely plant has yet been figured in any illustrated horticultural work. — W. E. G.

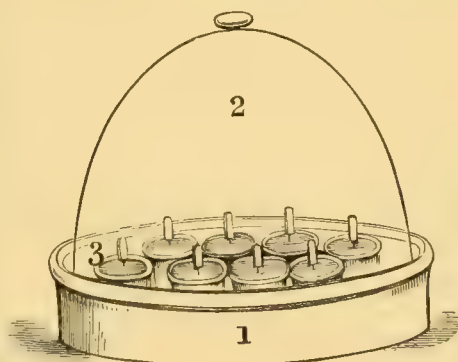
Grape Hyacinths. — In THE GARDEN, (p. 136) there is an article on Grape Hyacinths, on which kindly allow me to make a few observations. *Muscari lingulatum* is classed in group 1, but its bells are rather broader, or at least just as broad as long. It is by no means bright blue, but milky white tinged with porcelain; a thin strip of bright ultramarine stretches from each tooth to the top of the bell, and produces to the eye at some distance off the same effect as if the whole spike was of the brightest turquoise blue. It is the earliest of all the Grape Hyacinths, flowering, as it does, in February. From all information (notes, dried flowers, and figures) which have come to my notice, it appears that the true *M. Heldreichi* is rather scarce in England. It is, however, so distinct that it can easily be recognised among thousands of its brethren. It has the largest spike among the blue-flowered kinds, and also the largest bells, which are very prominent, owing to the broad and conspicuously white-margined teeth. — MAX LEICHTLIN, *Baden-Baden.*

Seedling Carnations. — It is surprising that raising Carnations from seed is not more generally practised than it is seeing that even if a very large percentage should turn out to be single they would well repay the labour bestowed on them, for single Carnations are by no means unattractive either in borders or as cut flowers, and the double flowers which one gets, although not perhaps up to the florist's ideal of perfection, are nevertheless very useful in borders. Their markings are very varied and beautiful, and they are very easy plants to raise from seed. I generally sow in pans or boxes in March, and as soon as the young plants are large enough to handle they are pricked off into other boxes 2 inches apart and by May they are large enough to plant out 1 foot apart where they are to flower; they only need keeping clean and watering, should drought prevail, to make very fine plants by the end of the summer. Very early the second year they push up their flower-spikes, and few plants produce such a mass of bloom as seedling Carnations. The colours of the single ones are usually most brilliant and varied and their perfume exquisite. Out of a good long row of these useful flowers, the seed being saved from ordinary border kinds, I have at least two dozen good double flowers that are well worth retaining, and I am sure that anyone who requires cut flowers in quantity cannot do better than raise a good bed of seedlings every year. — J. G. H.

FERNS.

RAISING FERNS FROM SPORES.

THIS plan, of which I give a sketch, has been in use by myself for many years, and most successfully. I have at various times given it to growers, but still I hear of difficulties. Procure a good sized bell-glass and an earthenware pan without any holes for drainage. Prepare a number of small pots, all filled for sowing, place them inside the pan, and fit the glass over them, so that it takes all in easily. Take these filled small pots out of the pan, place them on the ground, and well water them with boiling water to destroy all animal and vegetable life, and allow them to get perfectly cold; use a fine rose. Then taking each small pot separately, sow the spores on the surface and label them; do this with the whole number, and then place them in the pan under the bell-glass. This had better be done in a room, so that nothing foreign can grow inside. Having arranged the pots and placed the glass over them, and which should fit down upon the pan with ease, take a clean sponge, and tearing it up pack the pieces round the outside of the glass, and touching the inner side of the pan all round. Water this with cold boiled water, so that the sponge is saturated. Do this whenever required, and always use water that has been boiled. At the end of six weeks or so the prothallus will perhaps



1, pan; 2, bell-glass; 3, small pots and labels.

appear, certainly in a week or two more; perhaps from unforeseen circumstances not for three months. Slowly these will begin to show themselves as young Ferns, and most interesting it is to watch the results. As the Ferns are gradually increasing in size pass a small piece of slate under the edge of the bell-glass to admit air, and do this by very careful degrees, allowing more and more air to reach them. Never water overhead until the seedlings are acclimatised and have perfect form as Ferns, and even then water at the edges of the pots. In due time carefully prick out, and the task so interesting to watch is performed. H.

BEST CULTIVATED FERNS.

(Continued from p. 88.)

NEPHRODIUM PALUDOSUM (*Aspidium propinquum*). — A robust-growing species from Southern India, and one whose habit is very elegant on account of its beautifully arching fronds, the under surface of which is rendered particularly attractive by the whitish or glaucous colour peculiar to them. These are abundantly produced from a very long creeping caudex, which, as a rule, throws out roots wherever it touches the ground. This species is thoroughly evergreen, and as a plant for the cool rockery it has but few equals as regards effectiveness, and being a robust grower it soon attains a good size. Its fronds are 40 inches high, including stalks, which often reach 15 inches in length.

Pinnæ closely set, shortly petiolate, and measuring from 3 inches to 5 inches long by about half an inch in breadth; they are linear-lanceolate, acute, sometimes broader at the base, but at other times much contracted and pinnatifid half way down the rachis.

N. PTERIOIDES. — A handsome East Indian stove species, whose medium growth and particularly graceful and arching fronds, produced from a somewhat fleshy rhizome, seem to point it out as especially well adapted for pot culture. It forms a compact little specimen and most attractive; the upper surface of its fronds is rich green in colour, and the sori on the underside marginal and confluent.

Fronds arching, produced from a succulent caudex and measuring from 15 inches to 20 inches in height; simply pinnate, with pinnæ loosely set and obtusely lobed. Sori very copious, forming a band all round the margin.

N. PUNCTATUM. — Probably the strongest growing species of the whole genus, often attaining a height from 5 feet to 6 feet. It comes from Moulmein, where it is found growing in damp jungles. It therefore requires for the full development of its fine fronds, which though simply pinnate possess quite a pinnatifid appearance, to be planted out in a low situation on a warm rockery where there is constantly an abundance of moisture, which is indispensable to its well-being. A very peculiar, and at the same time attractive, appearance is produced by the sori, which are marginal and set all round the pinnules, being sunk in the substance of the fronds, rendering their upper surface quite punctured as it were. They rise from a creeping rhizome and are provided at their base with a few brownish small scales.

Fronds ovate-lanceolate, leafy portion from 3 feet to 4 feet in length; simply pinnate, though the pinnæ being cut half way down to the midrib, a pinnatifid appearance is given. The pinnæ, which are alternate, measure from 8 inches in the lowest to 15 inches long by about three-quarters of an inch broad, and closely set. Sori plentiful, marginal or disposed all round the pinnules.

N. SERA. — This greenhouse South American species, evergreen and graceful in appearance, is well adapted for decorative purposes, for besides its foliage being very elegant it also possesses another equally estimable quality appreciated in all decorative plants — viz., that of lasting on the plant for two or even three years. The difference between the young and old fronds is very great. The young ones are much larger than the old ones and of a drooping habit, whereas those that are adult stand perfectly erect, and are much narrower in all their parts; their texture, too, is leathery and their upper surface quite glossy. This Fern, producing, as it does, numerous and lasting fronds borne on very slender and round green stalks, makes a fine plant for a pot, rivaling in gracefulness many of the finely-divided-leaved Palms so much in demand for decoration now-a-days. Its powers of endurance, too, in living rooms are in no way inferior to those of Palms.

Fronds borne on round, slender stalks of a bright green colour and about 10 inches high, the height of the whole plant rarely exceeding 24 inches. They are pinnate, the pinnæ being mostly opposite, deeply incised when young, but only denticulate when older. Sori very small.

N. TRUNCATUM. — A very fine greenhouse evergreen species from Ceylon and the Sandwich Islands, and one comparatively rare in cultivation, although pretty and equally well adapted for pot culture or for planting out on a cool rockery, where it grows to about 20 inches high.

Fronds erect, produced from a succulent caudex, peculiarly glabrous, lanceolate-acuminate in shape, and pinnate, the pinnæ being numerous and closely set alternately. They are regularly and obtusely lobed, and often measure 8 inches long by 1 inch broad; they also are generally pinnatifid half way down to the rachis, and their segments, truncated, are inconspicuously toothed at the apex.

N. UNITUM. — This is one of those curiously cosmopolitan species found growing wild in very extensive ranges. It is very widely distributed throughout the West Indies, Brazil, the Cape of Good Hope, the Mauritius, Sumatra, &c., in all of which places it grows to a very large size, but the form mostly met with under cultivation is the one generally imported from Southern Florida, where it is found in abundance in all swampy or boggy places. This North American form, which only requires greenhouse temperature, is of a much dwarfer habit than those from the above mentioned habitats, and although its handsome fronds are sometimes quite smooth, they generally bear along the midribs and veins a few little scales and a very

scanty minute pubescence is found along the margins of the lobes. The whole plant is of a most distinct and pleasing vivid green colour.

Fronds on stalks about 10 inches, rising from a smooth and angular rootstock creeping beneath the surface and nearly black. Pinnae from twenty to twenty-five on each side of the rachis, set somewhat far apart, and measuring from 4 inches to 6 inches long by half an inch wide; they are obtusely crenate and slightly hairy, of linear-acuminate shape, and nearly straight.

N. VENUSTUM.—A very handsome evergreen stove species from Jamaica, and one which deserves more attention than it receives. At present it is found only in a few of our best collections, where its alternate pinnae, about 6 inches long, very regularly dentate on the margins, and of a rich dark green colour, produce a fine effect.

Fronds produced from a decumbent rhizome and borne on round dark green stalks, slightly scaly at the base; they generally measure 20 inches to 30 inches high, and are finely pinnate, with pinnae set close together and slightly auriculate, differing in that respect from most other species belonging to the genus.

NIPHOBOLUS.—This interesting genus is wholly composed of species, mostly of dwarf growth, with entire fronds, produced from wiry creeping rhizomes, whose spare roots only remain on the surface of the ground. They are all plants of a leathery texture, rendered conspicuous by the under surface of their fronds being possessed of a dense covering of stellate scales of a peculiar silvery hue when young, but which with age become light brown. All the plants belonging to this genus produce two kinds of fronds, the most ornamental being the barren ones, although the fertile ones, which are usually contracted, are by far the most interesting, chiefly on account of the sori, which in most cases are of a deep red colour, and cover the whole of the upper part of the under surface of the fronds. Being very shallow-rooting plants, they delight in growing on partly decayed vegetable matter, and form handsome masses when placed on conical mounds made up of turves of fibrous peat, which to begin with should be well skewered together, although later on the rhizomes will bind all firmly together without artificial aid. Plants belonging to this genus may also be grown with advantage on branches of dead trees and on stems of slender Tree Ferns, which, though generally rather slow growers, they entirely cover in a comparatively short time. It is, however, when grown in wire or, better still, in rustic wooden baskets, whose sides get entirely clothed with their numerous rhizomes, that the colour of the under part of their leathery foliage shows itself to greatest advantage. If grown in pots or baskets, loam should form no part of the mixture, and, though over-watering at the roots is most injurious to them, they greatly appreciate an occasional syringing overhead, provided it is done on bright and warm days only, and then in the early part of the day, so that their leathery fronds may dry up quickly, as prolonged wet would be sure to produce black spots, which in all probability would be but the starting-point of a decaying process, such as is too often seen when plants of *Niphobolus* of any kind are planted in low parts of the rockery or in stiff or imperfectly drained soil. None of them require more than a greenhouse temperature, but they all like as much light as can conveniently be given them. They are readily propagated by division, as every small piece of rhizome provided with two or three mature fronds roots freely when severed from the parent plant and pegged tightly on to a piece of fibrous peat; but great care must be taken to keep it on the surface, or it will in all probability never emit roots.

N. ACROSTICHOIDES (puberulus).—This is a rare species in cultivation, and one possessing a very peculiar appearance on account of its singularly long and comparatively narrow coriaceous drooping fronds produced at long intervals apart on small wiry rhizomes. They sometimes measure as much as 3 feet in length by only 1 inch in width, although they are oftener of the same width and only from 15 inches to 18 inches in length. In this species, which is found all over the Malayan Archipelago, Penang, and on the north-east coast of New Holland, the fertile and barren fronds are

perfectly similar in shape and size, and are also produced in about equal quantities.

Fronds leathery, on stalks seldom more than 2 inches to 3 inches long; they are branched, and the younger portions are squarrose, with large bright scales of a ferruginous colour; they are of a linear-obtusate shape, and their upper surface is of quite a glabrous character, whereas their underneath part is whitish or tawny. Sori small, prominent, and arranged in close series between the costules.

N. ADNASCENS.—Contrary to the preceding one, this species, which is a native of Southern India, is provided with two kinds of totally different fronds, the barren ones being hardly half the size of the fertile ones. The difference, however, is not limited to size only, for it is further shown in the shape, which varies from the spatulate or elliptical-lanceolate-obtusate form of the barren fronds to the linear or acute shape of the fertile ones. Both kinds are dark green above, but hoary with stellated pubescence beneath, and sometimes even quite white with copious compact hairs. The fronds bearing fructification are fertile throughout.

Barren and fertile fronds alike produced from a creeping rhizome, paleaceous with setaceous scales, the former seldom exceeding 3 inches long, the latter much narrower in shape, often measuring 8 inches to 9 inches in length. Both kinds are borne on short stalks only about 2 inches high. Sori, arranged in five or six obliquely transverse series, are deeply sunk on each side of the midrib.

N. ANGUSTATUS.—A peculiar species seldom met with in cultivation, but at the same time so striking and distinct as to be for ever remembered by whoever has seen it once. Its long, narrow, entire fronds, borne on stalks fully 4 inches long, are quite unique in the genus. The fertile ones are longer than those that are sterile and narrower in proportion, and they are set off to advantage by the sori, which are large and conspicuous, principally on the upper part of the frond. It is a native of Southern India, where it is said not to be very common.

From a long, creeping, branched rhizome, paleaceous with falcate scales, rise the strange-looking entire fronds, 8 inches to 10 inches long by about 2 inches in width, and tapering below into a stalk from 4 inches to 5 inches long; they are glabrous on the upper surface, but hoary and subferruginous underneath. Sori very large, subglobose, oval, and disposed in a single series on each side between the costa and the margin.

PELLÆA.

MARKET GARDEN NOTES.

Carrots.—The crop of Long Surreys this year will undoubtedly be lighter than it has been for a decade. From the time the seed was sown until the young plants came through there was not enough rain to well moisten the soil, so that a great portion of the seed did not germinate, and a large proportion of the plants were crippled or destroyed by fly before they attained sufficient strength to resist its attacks. To such an extent did many crops suffer that the ground was ploughed over and sown again, but this of course must lower the value of the crop, as the roots from such late sowings have not the time to become very large. The late soaking rains very much improved them, however, and where anything like a good plant was obtained the foliage has a healthy, sturdy appearance. Carrots do not mind hot weather when once they have formed roots sufficiently long to penetrate some 6 inches into the ground, but rather the contrary, and as the ground selected for Carrot culture hereabout is always of a light description, the tap root has no difficulty in penetrating it. As the beauty of Long Surrey Carrots depends upon their length and straightness, it would not do to grow them in land of a binding or very stony nature. Colour, too, is much influenced by soil, and it is almost needless to add that the brightest roots find the readiest sale, provided other essential points are present.

Some growers fancy that the deficiency in bulk this year will be compensated for by enhanced prices, but I am not so sure that such will be the case. I remember that in 1870 the summer was remarkably dry, only one good moistening shower occurring from April to September, and everyone thought that Carrots would be dear, but the hot weather appeared rather of the two to have benefited the Intermediates grown on the Essex heavy

lands; at any rate they came in in large quantities, and Carrots that year were cheaper than they had ever been.

Runner Beans.—These look very well this year, the warm season appearing to have suited them. In this neighbourhood they are sown 3 feet apart, and they never get more than 2 feet high, the practice being to go over them now and then and chop the tips of the shoots off with a sharp knife. When the ground is well stirred and manured they will go on bearing up to late autumn, unless cut off by frost. There can be little doubt that runner Beans are one of the most profitable crops grown at the present time. The first gatherings realise high prices, and there is a long season for them. In some years, of course, they do not yield so plentifully, but in a fair season an acre of land cropped with runners must bring in a good sum of money.

Ensuring Gooseberry crops.—Of two growers for market having Gooseberry plantations side by side, the one had a good crop of fruit, the other had next to none. Soil and situation were identical; why then this difference? It was simply a question of pruning, for whilst one man pruned his bushes by the ordinary method, the other did not prune at all in winter, merely cutting back the shoots somewhat, and thinning them out a little when the berries were swelling. Years ago my father practised this method with success, and I have heard him say that from the time he did so he never failed to have a crop of fruit—sometimes, perhaps, not very large, but enough to be worthy of the name, even in the worst of seasons. I have a friend who grows Gooseberries rather largely for an amateur, and I could never understand why he had Gooseberries every year without fail when his neighbours frequently had none at all. The garden being sheltered did not account for it, as there are others quite as well favoured in this respect, and in which in an unfavourable year there was scarcely a Gooseberry to be seen. But my wonder ceased when I found that my friend never pruned in the usual acceptance of the word, simply going over the bushes and clipping them in a little. Considering how important the Gooseberry crop is both to the market grower and in the generality of private establishments, the wonder is that the old-fashioned way of pruning has been adhered to so long. Anyone looking at a newly pruned Gooseberry bush cannot fail to perceive that the season must be very favourable for it to bear a full crop, since the wood is so severely thinned that it has no self-protective power. But non-pruned, the young tender berries are quickly covered with leafage, which is probably quite as efficient a screen from cold winds and rimy frosts as netting or canvas. Of course the bushes get much larger than they otherwise would do, but this is no great defect, as they bear more, and can of course be thinned out when becoming crowded. It is possible that the berries would not be so big generally as by the ordinary way, but this little drawback would be as nothing compared with the benefits derived.

Stocks.—Growers of these will have done well with them this year, for the winter being so mild and dry they came through it in fine condition. Probably for many years so many Stocks have not been seen in Covent Garden as this past spring. They came in by waggon-loads, and sold at the rate of 2½d. per bunch of a dozen sprays. At this rate an acre of ground would yield a large sum, for Stocks are compact of habit and take comparatively but little space. It is important to secure a good strain which gives but a slight proportion of single flowers. White kinds are favourites, and no wonder, for they are when pure extremely chaste in appearance.

J. C. B.

Adlumia cirrhosa.—We have seldom seen this in such good flower as it is in Dr. Low's garden at Wimbledon. It scrambles over the Apple trees in the most careless and vigorous way imaginable. We had no idea of the character and value of this plant till we saw it here.

FRUIT GARDEN.

PRESERVATION OF FRUITS.

ONE of the things to be first considered in the preservation and storage of all fruits is when to harvest or gather them. In some fruits a good deal depends on this. Some of the foreign fruits imported to this country are gathered before they are ripe, and it is said by those who know, and no doubt it is true, that we who eat such fruits here never taste them in perfection or even of fair quality. Among the fruits which are gathered in an unripe condition and which ripen in a certain way after they are packed or in the stores in this country are Oranges, Grapes, St. Michael's Pines, Bananas, and some other fruits which come from tropical or sub-tropical countries. The Oranges of the shops in this country may be described generally as of inferior quality, because none of them are properly ripened. An Orange ripens on the tree and will hang long in the ripe state, and fruits so ripened are incomparably superior to those which are gathered in a half or two-thirds ripe state and shipped to the English market. Those who have eaten Oranges abroad and from trees grown under glass in this country know this to be quite true, and those who eat newly imported Oranges know that they are, as a rule, uneatable, being so sour. Towards Christmas they get a little mellowed, and by spring they become fit for dessert, not because the flavour has improved, but because they are only less sour than they were. The object of gathering Oranges before they are ripe is to insure their keeping longer. They are gathered when just beginning to change from a green to a yellow state, and are packed in boxes containing from 250 to 1000. When the voyage was much longer than it is now there was some excuse for gathering the fruit in the half ripe condition, but now it is said no reason exists for the practice except custom. It is a subject for the dealers to see to. Another fruit which is gathered and packed in a green state is the Almeria Grape, so extensively imported to this country—the cheapest of all the Grapes sold, and probably as wholesome and good as many of the hothouse Grapes which are sold at from four to six times the price. As a grower of Grapes I have often been struck with the superiority of these Grapes over some of the dear, half-ripe, home-grown samples beside them. They are sound, plump, sweet, and refreshing, but do not possess much flavour. When picked and cleaned they are quite equal in appearance, if not superior, to some of our English-grown white Grapes sold. The length of time they are preserved in good condition is remarkable. English gardeners think if they keep perfectly ripened thick-skinned Grapes from September till April in fair condition without shrivelling, they accomplish a feat, but these thin-skinned Spanish Grapes are turned out of the cork dust in the barrels nine months or more after packing perfectly sound and plump. Some berries rot, but they never shrivel, although the foot-stalks perish. The worst feature about them is that they are gathered before they are ripe, and hence are deficient in aroma and flavour. This method of packing is simply a kind of ensilage, only as the fruit cannot be pressed so as to exclude the air, the interstices between the berries are filled up with clean and inodorous cork dust, to some extent fulfilling the same purpose. Fruits grown in our own gardens can of course be gathered at the right season, and that season is when they are just about to fall from the tree, but dessert Pears and Apples, as is well known, are not often fit to eat when gathered. When they part easily at the foot-stalk it is a sign they are ripe, but they have to lie from one to several weeks before they are fit to eat. The Jargonelle is never good just off the tree, but it needs only two or three days to render it so, and the fruit may be brought in in successional batches from the same tree by gathering some of the fruit every day and placing it in a dry room. This is the best way with those varieties of Pears that are soon ripe and soon over.

THE FRUIT ROOM.—If there be any change of opinion on the subject of fruit rooms, it is one

tending, if anything, to throw doubt upon the utility of those roomy and expensively constructed fruit rooms which have hitherto been considered the necessary adjunct of all large gardens. The importers of Apples have read us a lesson in this respect. From the tree all those fine Apples which supply the market during winter and spring go right into the barrel and remain there till they may be wanted months after; then they turn out in as fine condition as the best preserved specimens in the most scientifically constructed fruit rooms. The barrels are firmly packed, headed up, and stored away, and the best place to store them in is a dry cellar underground where the temperature is steady. Those who have no fruit room may, with perfect confidence, barrel or box off their best Apples and long-keeping ones in this way, and put them away till wanted. Lofts are not good places in which to store the barrels, because the temperature is irregular in such places, and heats and chills destroy fruit. The retail dealers when they buy in stock cellar the boxes at once, and only bring one or two out at a time and as needed. Good Pears may be preserved in the same way, but they are more tender and may be wrapped in tissue paper, and should not be put too many together, the better kinds at least. Spread out thinly on a dry shelf in a cellar they keep perhaps best. The best fruit room we are acquainted with is a cellar, but it is dry, and dryness is of the utmost importance. Previous to placing the fruit in it the cellar should be thoroughly cleaned and ventilated until it becomes sweet and nice, but as soon as the fruit is put in shut it up and keep it shut. The admission of air from open doors and ventilators cannot have any drying effect in winter, while it chills the fruit, produces condensation, and then decay. It is not a sign of good management or of a suitable place when Apples become alternately wet and dry according as the temperature outside rises and falls. The fruit should always be dry, and it will be dry if the temperature be cool and uniform, conditions which can only be secured in a well-drained structure, either wholly or partially underground. The fruits that can be kept for any length of time after this season of the year are Apples, Pears, Plums, Pine-apples, Peaches, Nectarines, and Grapes; of the first two we have spoken. Plums it is often desirable to preserve as long as possible after this season, as they are liked at dessert and for the kitchen. If allowed to lie in the basket or in a heap, even a few layers deep, they ferment in a very short time and become unfit for use directly. Choice Plums keep longest suspended singly by threads attached to the foot-stalks in the fruit room, and will hang till they shrivel in that way; but with large quantities this cannot be done, and the next best plan is to spread them out only one layer deep without touching each other on some kind of sieve, lattice-work of wood, or half inch wire netting that has been painted. The air circulates amongst the fruit in this way, keeps it dry, and such Plums as Damsons may be preserved many days that would become a mass of rotteness in less than twenty-four hours upon a deal shelf close together. Damson Plums are seldom fit to eat when gathered, but after lying a day or two till they become mellow they form a very agreeable addition to the dessert, and are always a change. We find they are eaten freely, at least, even when served along with Grapes and Peaches and other choice fruits when cared for in the above manner and picked for dessert.

PEACHES AND NECTARINES we have kept without blemish for close upon three weeks on the fruit-room shelf in the middle of summer—gathered as soon as ripe and set on a sheet of paper laid above a layer of cotton—and we have kept them over six weeks in boxes set on ice. The fruit loses flavour in the end, especially on the ice, and when brought out from the ice after two or three weeks it perishes in a few hours, and therefore should never be removed till wanted, unless it has to be packed to be sent away, but it is of no use sending Peaches away that have been long preserved in that way. At any time the fruit when brought off the ice, being cold, soon becomes very wet owing to the condensed moisture upon it, and which will not go

off till the fruit becomes as warm as the air, which takes an hour or two. Some Peaches and Nectarines ripen or at least fall off the tree before they are quite ripe. Such fruits will become soft in the fruit-room, but in order to give them flavour they should be set on a tray in a sunny and airy position in the Peach house till fit for dessert when they may be moved into the cooler fruit room to keep till needed. Coming to

GRAPES, I daresay most gardeners profess to understand their keeping pretty well by this time—by the bottling system, no other plan being known that preserves the quality and appearance of the fruit so well, although cut Grapes are always inferior in flavour to those which are left hanging upon the Vine. The Black Hamburg is a Grape that will illustrate this better than most kinds. I remember once tasting some berries of this variety that had come back from a three days' show, and, comparing them with others freshly cut from the same Vines, the difference in the flavour was so great, that I would not have believed it had I not tasted the fruit. Thick-skinned Grapes, like the late kinds, do not deteriorate so quickly; but they do deteriorate, and the best plan is to leave all Grapes on the Vine as long as possible. Some say that this exhausts the Vines, but I do not believe it. I have now Vines carrying their twentieth regular crop from which the Grapes have never been removed till the middle of February, and I think their present appearance would convince anyone that they had at least suffered no injury. The ripe fruit does not appear to draw more upon the energies of the Vine than the ripe wood itself. The ripening process is complete and the fruit is at rest, while little or no evaporation goes on from the skin of the berries in the cool temperature of a vinery in winter. Those who advocate the removal of the Grapes from the Vines on the score of relieving the Vines have to explain why the Grapes keep plump so long after their removal if they robbed the Vines so much. The peculiar flavour or virtue that they lose by removal is another thing which undoubtedly has some subtle connection with the Vine, but it does not appear to deprive the Vine of strength. S.

BUSH FRUITS.

IN THE GARDEN (p. 62), "J. G." makes some practical remarks on bush fruits. As a rule we plant Gooseberry and Currant trees too thickly and prune too much. "J. G." states that they may be planted 6 feet apart; this I admit is the usual distance, but I am satisfied that 8 feet or even 9 feet would not be too much. When planted thicker than this, severe pruning becomes necessary in order to keep them sufficiently clear of each other, and allow room for anyone to get between them. I was never so fully convinced of this as I was last summer when visiting a garden in Devonshire where bush fruits were largely grown and their cultural details thoroughly understood. In this garden the trees stood 8 feet apart in the rows, and the latter were the same distance asunder; consequently, severe pruning was not necessary, and the development of the trees was such as I had never seen before. The system of pruning adopted had, however, something to do with the matter. The young wood on the main branches was only thinned out to a moderate extent, and not all spurred back, as is often done. Some of the oldest branches when they get too thick were also cut close back to the stem. This kept the growth from being too much crowded, and the result was a constant succession of young branches springing up from the stem and magnificent crops of fine large fruit. I do not hesitate to say that, taking the whole number of trees, especially the Gooseberries, they were carrying a bushel of fruit each when I saw them. The branches were literally borne down by the weight of their crop. I ought to state, however, that the soil in which they were growing is both rich and deep. Some may be disposed to say that climate had something to do with it, but I do not think so; I believe, indeed, as large trees may be grown in any part of Eng-

land, *i.e.*, provided the soil is suitable and sufficient room is allowed for proper development. A better system of grouping the trees according to their habit of growth is also desirable. The Warrington, for instance, has a distinct type of growth, being dwarf in stature and having arching branches. This and those of similar growth should be planted together, while those with more erect growth might form another group.

J. C. C.

PRUNING GOOSEBERRIES.

THE present season has given us some lessons in fruit culture that it will be well to bear in mind for future guidance; amongst other things, I have been particularly struck with the variable character of the Gooseberry crop even in the same garden. When the severe spring frosts set in, Gooseberries were unusually well laden with blossoms; in fact, the embryo fruits had got well advanced, and where the bushes were left thick with wood, the protection afforded by the leaves saved a good portion of the crop, while other bushes that had been severely pruned lost nearly all, the little fruits appearing as if scalded after the severe freezing followed by bright sunshine to which they were subjected. Now, in pruning Gooseberries I like to adopt two or three different methods, so as to make pretty sure of a crop. But as the greatest demand is for green berries both for culinary purposes and preserving, I always let a quantity of the oldest bushes go entirely unpruned, and on these I have never yet failed to have good crops, even when hard-pruned bushes have been fruitless. I have followed this course from noticing what good crops we got from old bushes that, being condemned to be destroyed in autumn, were left entirely unpruned in spring; the quantity of fruit which they perfected, however, caused them to not only get a longer lease of life, but to become some of the best bushes in the garden. Since that date I have always left some bushes unpruned, and with very good results. When pruning is discontinued the bushes make short, stubby, fruitful growth; it is from where gross shoots are cut out one year another crop springs. I do not, however, advocate not pruning Gooseberries at all, as in order to ensure fine dessert fruit pruning is needful, but I am certain it is overdone in many gardens. Sparrows swarm here, and if our bushes were thinned out in orthodox fashion, and the sparrows took their usual tithe of buds, we should get but little fruit, even if spring frosts were merciful; but by leaving the bushes very thick, and by drawing the shoots up pretty closely together with a strong string until danger from birds and frosts are over, we have never failed to have plenty of Gooseberries, which, even if they do not come up to Lancashire ideas as to size, answer all purposes for which they are grown in a general way. We keep gathering the largest berries as they become fit for use, and thus no fruit which we cultivate gives us more certain crops than the Gooseberry.

J. GROOM.

Gosport.

Fruit trees in pleasure grounds.—The two varieties of Pear and Apple that might specially be selected alike for size, symmetry, productiveness, and flavour are the old Bergamot and the Blenheim Orange. I am afraid to name the number of bushlets that have been gathered in one year from a single specimen of Bergamot; at any rate, the quantity was reckoned by bushlets, proof sufficient that the tree was a fine specimen of its kind. The Blenheim Orange has been so often named as the very best Apple for this purpose, that I may leave it with this character, coupling with it the Orange, Strawberry, and Cackle Pippins. The symmetrical proportions of the Medlar have not, I think, been duly recognised. It forms a very handsome tree, nearly perfect in shape, and the foliage is dense—just the sort of tree, in fact, to stand out alone on a small lawn, and furnish a cool retreat during such weather as that which we have lately experienced. Our largest tree has a balloon-like head, the circumference of branches

being 21 yards. The Mulberry, too, is another tree that might be planted with advantage in order to combine the useful with the ornamental. It seldom fails to produce a crop, and where the soil is favourable to its development it makes a handsome tree. Like the Medlar, its foliage, being dense, affords complete shade. A specimen standing on one of our lawns has a girth of 4 feet 8 inches, with a spread of branches 35 yards in circumference. Lastly, let me mention the Siberian Crab. It has, as a rule, a well-formed head, and at this season, when covered with its small bright-coloured fruit, it is as pretty a sight as can be found in either park or orchard.—E. B.

Melon growing.—We have a lean-to house 20 feet by 10 feet. About the end of January it is cleaned, and the pit in front is filled with leaves and manure which have been previously turned twice. At one end of the pit I have a small propagating pit, in which the seedlings are raised. As soon as the heat is nicely up the soil is got in. It consists of good turfy loam, no manure or sand being added; this is well beaten or rammed quite tight, then when the plants are ready they are put out one under each light. They soon begin to start; all the side shoots are then pinched out until the plants reach the trellis, when they are allowed to throw out side shoots, and when the leader nearly reaches the top of the trellis I stop it. The temperature of the house must be kept up to 70° by day and 65° by night. Allow plenty of moisture about the house, and to prevent canker or rotting off at the stem some broken pieces of charcoal laid round the stem is as good as anything, and I put it there as a preventive. By the time the Melon plants reach the top of the trellis, blossoms will appear, then keep the atmosphere dry till they are set. I fertilise them with a camel's-hair brush as they open, and stop the shoot which bears the female flower. After the crop of fruit is set and about the size of a Walnut, keep pinching off any fresh growths, in order that the fruit may have all the support the plant can give it; water with liquid manure not too strong occasionally, and keep them syringed daily, giving air with caution during March, April, and May, and shutting up early. Our first crop of forty Melons was all cut in the beginning of July, when the old plants were cleared out, and young ones that had been prepared to take their places were planted for the autumn crop. When the Melons appear to be fully grown, do not water too heavily or the fruit is liable to split, and when ripening withhold water altogether.—T. M. MOBSBY, *Yate House, Chipping Soabury.*

A low night temperature for Vines.

—Some years ago the advantages of this were set forth in satisfactory terms by advocates of the system, and, although many were unwilling to accept all that was said in its favour, owing to its being untried, time enough has now elapsed to fully test its benefits by all who have given it a trial. I am therefore anxious to have a few brief and accurate records of its results for my own benefit, and also for that of many of your readers who have frequently asked me for particulars regarding the system. I would prefer evidence from different parts of the country where the climate and sun-influence varied; also the names of the varieties of Grapes subjected to the treatment, their time of being started into growth, and date of maturing their crops. Does it take Grapes longer to ripen under the cool night temperature than in the old-fashioned way? Are the Vines more robust or prolific, the bunches or berries larger, the colour denser, or flavour higher in low than under high night temperatures? I believe that the Vines at Wortley have been longer under cool treatment than any others in the country, and Mr. Simpson's evidence would be particularly acceptable in reference to the points named. It is generally admitted that Muscats require a higher temperature to perfect them than any other variety of Grape, and I hope Mr. Simpson and others will state if their Muscats are finer now than before they were subjected to low night temperatures. This is important, as in my opinion Muscats will test the value of the system better

than any other variety. I do not ask for arguments as to the advantages of the system; I only want facts.—WELSHMAN.

GARDEN FLORA.

PLATE 454.

ODONTOGLOSSUM CERSTEDI.*

THIS, one of the prettiest and most remarkable of all the smaller-growing *Odontoglossums*, appears to have been originally discovered by Warscewicz as long ago as the year 1848, since a rough sketch of it is in existence prepared by that veteran traveller about that date, although living plants of it did not grace our collections until a much later period. Then (Ersted found it in Costa Rica, as also in later times both Wendland and Endres—bright little Señor Endres, the friend of Roezl, and one of the most genial, if ill-fated, of collectors. When seen at its best this is a pretty little species, and I never saw it in better condition than in Baron Schroeder's collection at Egham in April last, when Mr. John Dominy honoured me with his company, and we spent a most enjoyable day in what is perhaps the most select collection of Orchids in England, or in the world. I remember seeing a charming panicle of *O. Pescatorei Veitchianum* at the same time; *O. Pescatorei Schroederianum*, the spotted variety, was also in bloom; and quite near to these gems a pot of our present modest little species bore at least twenty or more flowers. When Reichenbach described this plant in 1877, he began his description, "*Juxta Odontoglossum crispum*, Lindl.," but its nearest ally now-a-days is *O. Krameri* without a doubt. The flowers are borne singly or in pairs on stalks 3 inches or 4 inches in height, and are pure white with a golden callus sprinkled with orange dots, which add brightness to the snowy perianth. In its native habitat on the St. Juan Mountains, in Costa Rica, it is found at an altitude of 8000 feet to 9000 feet. It grows most freely in a Cattleya house or intermediate temperature in a well drained compost of fibrous peat and living Sphagnum Moss, and although not at all showy is a distinct plant, well worth a place in the most select collection.

F. W. B.

NOTES FROM JERSEY.

BEING on a pleasure trip to the Channel Islands, we were allowed to visit several gardens, and are glad to find that the fruit crop throughout the island is this year a good average one; some of the trees were overloaded with Pears, especially Chaumontels; Apples in some parts are plentiful, in others thin, having suffered from easterly winds. Figs, both as standards and low flat espaliers, seem plentiful and fine. Amongst places which we admired most was La Chaire, the residence of Mrs. Fothergill, a place unique of its sort, being in terraces up a very steep and high hill, from the top of which can be seen the Ecrehos Rocks and also the coast of France; here we found growing in the open air the finer kinds of Rhododendrons, Acacias, Chinese Azaleas, Bamboos, Myrtles, Camellias, Gum trees, Tea plants, and numbers of other interesting subjects. In the garden of a cottage adjoining is the largest and finest Hydrangea I have ever seen, covered over with a mass of blue flowers. We had to return to give it a parting look. Several smaller specimens may be seen in this lovely valley, all bearing blue flowers. The Fuchsias claimed our attention, many of them being from 10 feet to 12 feet high. Sunflowers are here extensively grown. Amongst the Cow Cabbage the tallest we came across mea-

* Drawn in Mr. Lee's garden, Downside, Leatherhead, April 10, 1884.



sured 14 feet high. In the evening we went to Five Oaks, and visited the Troglodyte Caves. These works of art and patience have been cut out of the clay used for brick-making. We had intended visiting on the Wednesday evening the summer show of the Royal Horticultural Society, held in the grounds of Government House, but the downpour of rain compelled the committee to close at dusk. To-day we have visited the market and purchased luscious Grapes, Peaches, Figs, &c., at a price far below what we have been accustomed to pay for such fruit elsewhere.

C. J. HOLME.

SEASONABLE WORK.

FLOWER GARDEN.

PROPAGATION should now be proceeded with as opportunity offers. Pelargoniums have made rapid growth of late, and there is plenty of cuttings, but they should be taken off carefully in order that the beds may retain their effectiveness after the cuttings have been selected. Our best bedding kinds are, scarlet—Bonfire, John Gibbons, and Vesuvius; pink—Master Christine, Lady Byron, and Amaranth; rosy crimson—Waltham Seedling; light purplish crimson—Lord Palmerston; white—Madame Vaucher, still the best. Our best fine foliated kinds are Sophia Dumaresque, Maréchal McMahon, May Queen, Mrs. Laing, and W. F. Radclyffe; others equally good might be named, but these are the best for general bedding effect, and it is much better to grow a few reliable varieties than numerous doubtful novelties. Flower beds need repeated going over and the removal of bad and seeding flowers. Violas and Caeolarias, generally the first to succumb to heat and drought, never fail, even on our light dry soil, and the only reason, next to having good supplies of water, why they do not is that old flowers are regularly picked off them. The same rule is applicable to all free flowering plants. To keep Lobelias in full blossom we occasionally clip off a portion of the tops with sheep shears; the plants at once throw out fresh shoots, and thus the flowering season is extended. Of course such work requires to be done cautiously and with discernment, taking care that sufficient flowers are left to last till new ones make their appearance. Fine foliated plants in beds of geometrical design now need going over once a week to keep the outlines true to pattern, but though this is advised, it must not be supposed that evenness of plants or table-like flatness is meant, but rather that the plants should be allowed to grow naturally; the effect is then much more pleasing, and the labour needed to keep them in order less. In such beds we always use what—for want of a better term—we call “dot” plants, and these are kept in shape by ties, stopping, or curtailment of growth, according as the character of each demands. Our best plants for such a purpose are Grevillea robusta, Chamæpeuce diacantha and C. Casabonæ, Abutilons, Fuchsias, small Dracenas, Aloes, and Agaves. The best basket or large vase plants of the season are the single Dahlias and Marguerites—white and yellow. Of the former, Paragon, alba, and Juarez are three of the best; their flowers, unfortunately, do not last long, otherwise such plants are a great acquisition. Tying up these and tall sub-tropicals are also just now important items of labour.

FRUIT.

CUCUMBERS.—The weather which we have lately been having has favoured frame Cucumbers, as it has enabled us to give more stimulating food to the roots, and plenty of atmospheric moisture after closing with strong solar heat for the day. It will not, however, be well to allow the heat from linings to decline, as nights will soon counterbalance days, and lack of bottom-heat will tell upon the quantity and quality of the fruit. As few plants so quickly resent neglect, see that the thinning out, stopping, and removal of surplus fruits receive the proper attention at least three

times a week. Peg down the joints, and pack with pieces of fresh turf wherever fresh roots can be induced to work on the surface, and while keeping the frame well filled with fresh, healthy foliage, guard against overcrowding with old leaves, which often become the starting-point for red spider and mildew. From this time forward the sowing of seeds of Telegraph and other favourite winter kinds must be regulated by the periods at which the different compartments, now occupied with Melons, will be at liberty, and the same rule will apply to cuttings, as in each case it is better to throw away pot-bound plants and start with fresh, young stock than to run the risk of fostering insect pests from the outset. Where the yearly supply of fruit is obtained from one or two efficiently heated houses, now is a good time to clear out one. Cleanse, paint, scald, and lime-wash preparatory to a new start, as this opportunity may not again occur before next spring, and everyone knows how fresh and vigorous young maiden plants go away with everything clean and sweet about them. Where home-grown seed is in demand, a given space should be devoted to its growth, and clean, healthy fruit should be selected and carefully fertilised with the male blossoms. When ripe, wash out the seeds, and if progress is the first consideration, discard all that do not sink in the water.

ORCHARD HOUSES in which the fruit is now ripening may have all the ventilators left open, as highly flavoured Peaches and Nectarines cannot be obtained without a free circulation of air. Pay particular attention to the watering of trees in pots in all stages of growth, never allowing them to feel the want of this indispensable element, and syringe freely twice a day wherever clean water can be applied without wetting the ripe fruit. Always make a point of gathering the fruit when dry and cool, and before it is ripe enough to fall from the trees, otherwise it will lose its sprightly flavour, and the slightest touch will hasten its decay. When all the fruit has been gathered from the most forward trees, remove them to one end of the house or a separate compartment to be potted or top dressed and cleansed, and re-arrange later kinds, so as to give them the benefit of more light and air. Where trees are fairly cropped, but little pinching or stopping will now be needed; but any sub-laterals which start may be kept in check, and old leaves, where they overhang the fruit, may be turned or tied aside to let in the sun. Where Figs are grown in the ordinary orchard house the trees will now be in full bearing and capable of taking plenty of good food, both in the liquid and solid form. When large trees in medium-sized pots are not plunged, it is a good plan to set them in saucers and to feed the crock roots every day with diluted liquid or guano water; but where plunging can be practised the trees will give a maximum of fruit at a minimum of cost in labour, they will continue much longer in bearing, and the fruit will be finer and better in quality.

PINES.—As the summer fruiterers are cleared away and space can be gained, a few of the most promising Queens should be collected together and plunged in a steady bottom heat of about 85°, with their heads near the glass in a light, airy pit, to ripen up their growth before the dark dull days set in. It is easy enough to grow a large plant in a very short time; but unless the growth can be properly matured, and the roots can be kept in a temperature of 75° to 80°, the chances are greatly in favour of such tender kinds as Queens throwing up small or deformed fruit. The object, therefore, should be the production of stout, stocky plants which can be thoroughly ripened by October and rested through the dead months in a temperature that will not chill or starve the roots, while the steady warmth is too mild to cause them to throw up prematurely. The general stock of plants now growing freely must be encouraged with stimulating food, plenty of atmospheric moisture, and early closing to save fire-heat, and, with the exception of rootless suckers, which will require protection from very bright sun, shading of the lightest description

only must now be used for a short time through the middle of the day. Where there is only one fruiting pit, and it is thought desirable to keep recent starters in a moist growing atmosphere to get them well on before winter, all summer-swelled fruit may be lifted out and placed in a dry, airy vinery to ripen up, and when properly coloured the plants and fruit can be stored away near the light in a cool Grape room. See that that valuable but much neglected Pine, the Black Jamaica, is not overlooked, as it enjoys a strong and does not object to a dry bottom-heat. It also grows and swells off fine fruits in very small pots, which cannot be excelled, if equalled, by any other winter Pine in cultivation. Where plants are now throwing up fruit, if mixed with other kinds, they should be drawn together and plunged at the warmest end of the house, or in a small compartment to themselves, with just sufficient head room to keep the crowns, which are apt to become large, from touching the glass.

SUCCESSIONS AND SUCKERS.—Follow up the irregular system of potting up suckers as they are detached from the plants, and get them quickly rooted in a strong bottom-heat from fermenting leaves or tan. Shift into larger pots if they require more room, in preference to allowing them to remain pot-bound all the winter, and plunge close to the glass in a light, airy pit where they will keep growing through the winter. Examine successions that were passed over at the last potting, shift if necessary, but guard against over-potting after this period, and keep the plants growing until they start into fruit next spring or early summer.

VINES.—Let the Vines in mid-season houses be well cleansed with the engine or hose as they are cleared of fruit. Examine internal borders, and give them repeated waterings where they have been allowed to become at all dry, as no greater mistake can be committed than that of allowing the internal roots to feel the want of liquid food after the crop is gathered. If trained on the close-spur system shorten back the young wood to five or six buds and take out the lower laterals to plump up the fruiting eyes. Carefully preserve all the old foliage from injury, as future shows depend upon the way in which the leaves complete their functions, and from this time onward leave the house fully ventilated by night and by day. Cover up the external borders of early and late vineries with some light material for checking evaporation, but guard against using it to the exclusion of solar heat, as, owing to the cold, sunless character of the season, the ground has never attained its proper summer warmth, and on this account the roots should not be too much shaded from the influence of the sun and air. The principal crop of Muscats now colouring fast will require more light and as much air as can be admitted consistent with the maintenance of a temperature ranging from 70° at night to 85° by day, and when properly coloured, as will be the case by the middle of September, the Grapes will keep for several months if the external roots can be protected from the direct influence of cold autumnal rains. Where incessant firing has fostered spider, and the old foliage has suffered and become thin, it is a good plan to tie down a few of the laterals, and stop them at various lengths, so as to insure an even spread of foliage, which answers the twofold purpose of assisting the Vines and shading the delicate fruit from the direct rays of the sun. Muscats that are quite ripe will require some very light material drawn over the roof, to prevent the sun from scorching the berries. Hay-thorn's netting answers well, as it excludes insects and does not interfere with the free passage of light and air. Proceed with the lifting and relaying of the roots of Vines in early houses before the leaves fall and lateral growth ceases; keep the house close, moist, and shaded from bright sun; use good turfy loam, lime rubble, and crushed bones in a dry state; give a little water to settle the soil about the roots and mulch when all is finished. If vigorous young Vines intended for next year's forcing do not show a disposition to ripen up their wood, apply fire heat every morning,

shut it off in the afternoon, and keep the house dry through the night.

INDOOR PLANTS.

It is necessary now to attend well to the general stock of winter-flowering plants. These are mostly quick growers, and as the roots fill the pots which they occupy, it is needful to supply the soil well with manure water, otherwise the strongest growers are sure to suffer. If the propagation of the various plants, such as Begonias, Salvias, Euphorbia jacquiniæflora, Poinsettias, Eranthemums, Plumbago rosea, Thyrsacanthus rutilans, Sericographis Ghiesbreghtii, Aphelandras, &c., was carried out at the time recommended, and due attention has been given to them since, the greater portion will be fast approaching the requisite size, after which in most cases they should have more air, less shade, and a somewhat lower temperature, so as to discourage exuberant growth, and to solidify and mature that which is made. There are some things amongst winter-flowering plants, such, for instance, as Poinsettias, which, if started sufficiently early to get them big enough before cold nights come on, are none the worse for being kept a few weeks in an unheated house or pit, or even in the open air for the last two or three weeks in August if the weather is warm. The finest heads of Poinsettias we ever had, 20 in. in diameter from point to point of their bracts, were from the previous year's struck plants, headed down in the beginning of April, and grown on in good-sized pots with single stems, which, when they had reached a height of from 4 feet 6 inches to 5 feet, were turned out the beginning of August under a south wall and kept there until the end of the month. They were then taken inside and subjected to heat by the middle of September. This treatment stops all disposition to make further growth, and has the effect of hardening the tissues and enabling the plants to concentrate all their energies in the production of flower-heads. For general purposes medium-sized heads are the most useful, but where employed for the decoration of a large structure, large heads have a most telling effect; to secure them the plants must be both tall and proportionately strong, and have all their strength directed to the production of a single head. The majority of these winter-flowering subjects are comparatively little liable to the attacks of insects, yet care must be taken that red spider or any other pest which will thrive upon them is not allowed to go on unchecked, or the appearance of the leaves, as well as the flowering capabilities, will be seriously affected.

SUMMER-BLOOMING HEATHS.—These may consist of such as flower through June and July. Immediately the flowering is over remove the dead flowers, so as to stop the production of seeds, which sadly tax the energies of the plants and impede growth. Vigorous healthy plants treated as here advised will often produce a perfect sheet of bloom year after year in succession; whereas if allowed to seed there is little flower, except in alternate years. Early in spring and sufficiently early in autumn, say September, are the best seasons for potting Heaths; in many cases the latter is preferable, and wherever Heaths are at all cramped at the roots preparations should at once be made for repotting. All specimen Heaths out-of-doors should be looked over twice a day whilst the present dry weather continues to see whether they do not want water, and on the least trace of mildew becoming apparent at once supply sulphur. Winter-blooming Heaths should now be exposed to the full rays of the sun where they will get plenty of air, as on this depends their growth being thoroughly matured. However full of roots the pots may be, it is not well to resort to the highly stimulating manures often applied in the autumn season to this section of Heaths, by which means extreme vigour and luxuriance is frequently gained at the expense of flowers that rarely are forthcoming proportionate to the growth where this over-exuberance exists.

ORANGES AND CITRONS.—These are best kept wholly under glass where means can be found to

accommodate them, but where, as is often the case, they have to make way for other things in summer there is no course but placing them outside. This affords an opportunity of giving them a thorough cleaning from scale insects, to which they are so much subject. If time can now be spared an effort should be made to eradicate these pests. The plants ought to be well attended to with water, and if at all under-potted, and the foliage shows, by assuming a yellow hue, that the soil is poor, manure water should be given. Any plants of this family about which there is the least doubt that the drainage of the pots or tubs which they occupy is at all defective should at once have means taken to rectify the evil, otherwise the soil becomes sodden and the roots are certain to perish.

PELARGONIUMS.—Plants of the early-flowering kinds, such as are now so extensively cultivated by the Covent Garden Market growers, and also the earliest bloomers of the show and fancy varieties that were cut back a short time since, and which have now broken, should at once be shaken out and repotted, removing most of the old soil and somewhat reducing the roots. They ought to be placed in pots a size or two smaller than those in which they have flowered. It is well to remind beginners that this section of the Pelargonium family requires to be harder potted than soft-wooded plants generally, for unless the soil is rammed hard with the potting lath, so as to make it quite solid, it holds more water than the roots can bear during the winter months, as the young feeding fibres, especially of the fancy kinds, are extremely sensitive of anything approaching a wet, spongy condition of the soil, and the strongest growers amongst the large-flowered sorts always run over much to leaf if the soil is in a condition to hold much moisture. As soon as potted place the plants in a pit or frame, where they can be kept close for a week or two, until the roots have begun to move, but they must also be where they will get a full share of light, otherwise the young leaves will be drawn, a state which must be carefully avoided. Head down such as have been kept on flowering the latest as soon as the wood has got hardened up by exposure in the open air in the way recommended for the earliest batch, first letting them get quite dry at the roots.

MIGNONETTE for late spring flowering is best grown in small pots, say 6 inches or 7 inches in diameter. Half a dozen seeds should be sown in 4-inch or 5-inch pots, sufficiently drained and filled with good loam, to which has been added a little sand, leaf mould, and rotten manure. The pots should then be placed in frames, raising them near the glass, and keeping them close until the seed has vegetated, when the lights ought to be removed so as to keep the plants short and stocky; they should be thus exposed until there is danger from frost. When so treated they will be in the best condition for standing the winter.

POTTING SOILS.—This and the next month are the best for securing peat and loam for the ensuing year's potting. At first sight it might be supposed that soil for such purposes could, with equal advantages, be dug at any time, but this is by no means the case; the fibrous matter furnished by the roots of the native plants, Grasses, and Ferns that occupy the land from which the turf is dug is a most important element in potting soils; such as possess this fibrous matter in the greatest quantities are immeasurably the best for by far the greatest number of plants. When collected it should be stacked in the open air; on no account put it into sheds or under a roof of any kind, except a short time before use, as where thus placed out of reach of rain it gradually gets dried up unnaturally, and when reduced to this condition a great deal of its fertility is irretrievably lost. Where peat and loam have been subjected to an unnatural drying process we have found that the plants afterwards potted in them invariably failed to thrive as they ought to have done. Peat is now, we believe, unobtainable at Wimbledon, but it can be had as good elsewhere.

KITCHEN GARDEN.

WE are now busy with the first Mushroom beds for autumn bearing. We generally have our beds in some out-of-the-way place, as they are anything but ornamental, and the site is allowed to grow wild during summer, except that we mow down the weeds to prevent them from seeding. The object is simply to get a semi-turf to consolidate the manure, as at this season the manure gets dry. We first adze up the turf and put it to the manure, then add turf, watering at the same time with strong liquid manure, making all solid as the work proceeds, turning it about twice or thrice, when all is ready for building the beds. Spinach should now be sown, also Cauliflowers, and we do not like our Tripoli Onions to be late. Cabbage and Lettuce should have timely attention. Take especial note that Celery should not be allowed to flag; give it good soakings of water, putting the spout of the can close to the surface to prevent any scalding. All late Peas should also be mulched and well watered; if a little manure water is at hand mix a pailful of it with 36 gallons of clear water; this will add to the welfare of the crop. Leeks and all strong feeders must have due attention, otherwise the crops will be lost. Young seeds now just up should be hoed as soon as the plants indicate the rows; this hoeing has a tendency to keep off slugs or other vermin. If you make the leaves distasteful, and by hoeing cause a certain amount of grit to stick to them, you will find that they will not be troublesome. Keep all garden walks clean and trim.

INDOOR GARDEN.

LACHENALIA TRICOLOR.

LACHENALIAS form a distinct and useful class of bulbous plants for greenhouse decoration in spring and early summer. The commonest species is *L. tricolor*, and there are also some other grand kinds of more recent introduction, such as *Nelsoni* and *lutea*; but the culture pursued in the case of *L. tricolor* will also suit them, their requirements being in all respects similar. Of *L. tricolor* a few bulbs should be within the reach of everybody, and *Nelsoni* should also be grown by all who can obtain it. Now is the time to start these *Lachenalias*. If the bulbs have been kept quite dry since the time when they went to rest, they will part freely from the soil; the whole stock should therefore be collected together before commencing to re-pot. By doing this the largest and the smallest sized bulbs can be selected and grown separately in order to have those together that will produce spikes of flower of somewhat similar strength. The soil should consist of two parts rich loam and one part leaf-soil or well-decayed manure, adding sufficient sharp grit or sand to keep the whole porous. Although *Lachenalias* require plenty of water during most of the growing season, they will not bear a waterlogged soil; consequently the drainage must be efficient. The bulbs should be placed at first in the pots or pans in which they are intended to flower. Pans about a foot in diameter and 6 inches deep are best, as the flowers look most effective when seen in a mass. If such pans cannot be obtained, 5-inch pots may be used, placing five or six bulbs in a pot. The largest bulbs should be selected for the pans; they should be placed an inch or rather more apart, and covered with half an inch of soil. After potting, ours are placed in a shallow pit on a bed of ashes, where they remain during the winter. *Lachenalias* should not be put in a dry place, nor wintered in a situation exposed to fire-heat—i.e., if strong sturdy plants are desired. We give them much the same treatment regarding temperature as *Intermediate Stocks*, *Schizanthus*, *Pelargoniums*, &c., and they succeed admirably. Air is admitted in winter on all favourable occasions, but cold draughts should always be avoided, or the leaves will become brown and disfigured. As the plants grow more room must be allowed them, and in winter as much light admitted as possible by keeping the glass clean. *L. tricolor* keeps in flower a long time, especially if some of

the plants are retarded. Some recommend forcing, to which the plants are to a certain extent amenable, but they are seldom so strong or last so long as when kept altogether in a cool place. Where there are plenty of plants a few may, however, be placed in a somewhat warm position for flowering early, and if kept near the glass they will not be much injured. A little artificial or liquid manure applied when the flower-spikes appear will generally prove beneficial, but care should be taken not to put any on the leaves. The plants commence flowering in April in cool positions, and if some be retarded by being kept in a house or frame with a north aspect, their flowering season may be considerably prolonged. They must not be exposed to cold draughts during February or March, when easterly winds are generally prevalent. As to arrangement when in flower, if placed about indiscriminately in the form of single pots or pans, the general effect which they are capable of producing when better arranged is lost. Projecting corners of the stages are the best positions, and if a pan be placed in the middle and surrounded with a few pots, thus forming a group that may be repeated in other parts of the house, a distinct and pleasing feature is thereby obtained. Each strong bulb will produce three or four spikes of flowers, and if the plants be replaced as they get past their best by later ones, such groups may be kept attractive for two months or more at a time. After flowering is over the plants should be removed to a sunny position in order to thoroughly ripen the bulbs, withholding water gradually until the leaves are dead, when its use should be wholly discontinued. J. G. K.

CULTURE OF PANCRACTIUM FRAGRANS.

WE have got just now a specimen of this lovely bulbous plant with four spikes of flowers on it, about from twelve to thirteen flowers being on each spike, a result which certainly well repays any little care that has been bestowed on it. The flowers are of such a pure white and so fragrant, that it has few rivals in these respects, and for decoration it can hardly be equalled. Its only fault is the short time during which it lasts in flower, from eight to ten days being as long as it will keep in perfection even in a cool house. *Pancratiums* are sometimes subjected to a roasting temperature, which is not at all good for them. We generally grow them through the winter in a temperature of from 57° to 60°, fully exposing them to the sun all the year round, and we have them in flower twice in the year, viz., in March and again in August, according to our requirements. The less shifting about they get the better, except when really necessary. When the bulbs get very low in the pots turn them out, examine the roots carefully, and repot if necessary in a pot a size larger in a compost consisting of half turfy loam, quarter peat, quarter rotten manure, and if a few half-inch bones are added all the better. Let the whole be well mixed with silver sand. After they have completed their growth rest them a little by withholding water, but at the same time do not allow the leaves to flag or get injured in any way, for when that happens their ability to flower is impaired. Remove all small bulbs when potting and place them in pans, potting them off singly when strong enough, and keep them in 6-inch or 7-pots as long as possible, for in this size they are better adapted for indoor work than in pots of a larger size. *Pancratiums* may be readily increased from seed, which should be sown in spring upon light sandy soil. Place the pans in heat close to the glass, and give very little water till the seedlings appear, which will be in a very short time. Pot them off when fit to handle and they will soon become useful plants. H. K.

Anthurium Andreanum.—With reference to the remarks of "W." (p. 120) concerning the habit of this plant, allow me to state that I have here two specimens of it, one resembling that at Kew, and the other tufted, exactly resembling *A. Scherzerianum*. The two I have are

most distinct in their habit of growth. The young leaves of the climbing variety are dark brown when expanding, whilst in the tufted form they are pale green. The climbing variety I find to be very slow in propagating, throwing out few if any suckers.—THOMAS SPELMAN, *Solsborough, Nenagh*.

Solanums from cuttings.—Those who have hitherto been content with growing *Solanums* from seed will not regret giving this plan a trial. When the plants are done with for decorative purposes, a stock of the best berried ones should be selected and set in a cold frame till wanted for propagating. They strike very freely during the spring months in frames in which a growing heat can be maintained. As soon as they are well rooted we take care to keep them on the cool side, our object being to make them as hardy as possible. We have now a batch of well-berried plants in 6-inch pots raised from cuttings in March and kept in cold frames since May. Where not planted out, coddling must be guarded against; in fact, we have the lights taken off every night when the weather is favourable.—B., *Bristol*.

Gloxinias at Edinburgh.—The following *Gloxinias* sent out about two years ago by Messrs. Laird are of great beauty both as regards colour and form; most of them have erect flowers. David Baird, a fine kind, with a dark red throat and pink lip, and very effective; as is also Rev. J. Halsey, a variety with drooping flowers, shaded rose and purple; Mrs. George Keith and Colonel Trotter have purplish throats and white lips; the Honourable Mrs. Trotter has a rose throat and clear white lip; Miss Cunningham, white throat and shaded purple lip; Alice Cooke, white with a rose coloured ring inside the white lip; and not least beautiful is a seedling not yet sent out, very large, with purple throat and white lip; and another seedling, blush with the lower side of the throat dark crimson, is very distinct.—C. M. OWEN.

Pelargoniums for pot culture.—"W. J. M." asks (p. 131) for a few names of double or semi-double zonals for pot culture, which I have much pleasure in giving. First on the list is unquestionably Madame Thibaut, a bright rosy pink, which I find invaluable at all times of the year, as it produces large trusses with a freedom equal to the single *Vesuvius* and is excellent in habit. We are never without blooms of this kind, for as soon as plants of it get exhausted we take the tops off for cuttings, give the old plants a little rich top-dressing, and place them on light shelves near the glass, where they soon become covered again with lovely trusses of flowers. I should unhesitatingly say that this is not only the best double, but the best zonal of any kind in cultivation, new or old. I have some of the latest and best sorts flowering side by side with it, but they do not come near it in colour, habit, or amount of bloom. Then there is Wonderful, a well-known orange-scarlet kind, good in habit, and a very free bloomer, opening well at any time of year, and producing large heads of brilliant flowers—the best of the scarlet varieties. Sergeant Hoff is somewhat similar to Wonderful, and a very desirable variety. F. P. Raspail is one of the best of purple doubles, good in habit, and a very free flowerer. Of newer sorts *M. Leon Freue*, carmine, appears likely to be good. *Venus* is a very pretty pale pink, *Flambeau* a splendid scarlet, *Comtesse de Tannenberg* a good rose, and *Scorillett* a good violet-shaded variety.—JAMES GROOM, *Gosport*.

Pelargonium Unique.—It is now-a-days quite an uncommon occurrence to meet with this *Pelargonium* in gardens, though when well grown few are prettier, the flower-heads being compact, distinct in colour, and borne on long stalks; the foliage, too, is agreeably scented. When grown for cutting, it is astonishing the amount of flowers yielded by a few old plants, if a little care and attention be bestowed on them. In a case that came under my observation, some large plants had been employed to cover the end and part of the roof of a greenhouse, which they did perfectly, and being thus well exposed to the light, so that the wood

was well ripened, a great profusion of flowers was the result. This *Pelargonium* is very useful for winter blooming, but for this purpose they are grown in pots, so that they can be shifted about when necessary, as if placed out-of-doors during the summer they bloom more freely when introduced into a gentle heat than if allowed to remain indoors the whole of the year. As a decorative plant, however, this *Pelargonium* is probably seen to most advantage about the present season of the year, when, if in good health and trained in a bush form, the whole specimen will be laden with its beautiful blossoms. Sports are of frequent occurrence in this plant, and in that way many varieties have been obtained. The *Crimson Unique*, *Rollisson's Unique*, and what is known as the *Old Unique* are all distinct and well worth growing. *Rollisson's* or the *Purple Unique* reverts sometimes to the old lilac-coloured form in a curious way, as at times on a large part there will perhaps be a few trusses entirely lilac, while others will have but one or two flowers of that hue, the rest being of the proper tint, while occasionally particular flowers occur, i.e., with some of the petals lilac and others magenta-purple.—W. T.

Leea amabilis.—This is a stove fine-foliaged plant of recent introduction, and one very distinct in the colouration of its leaves, which when in a young state are brownish, with a rose band along the midrib, but when mature they change to a deep green, and the central band to a silvery whiteness. It is certainly a very beautiful object, at least when young. With me it will only flourish in a close case in the hottest part of the stove, as if exposed to the ordinary atmosphere of the house the leaves become discoloured and the beauty of the plant is lost. From my experience, I should say the most satisfactory way to treat it is to frequently strike young ones rather than to grow on the old plants, and confine them to comparatively small pots. When treated in this way, and about 6 inches high, with perhaps half-a-dozen leaves with the colouration well defined, it is indeed a beautiful object, worthy of association with such jewels as *Bertolonias*, *Fittonias*, *Sonerilas*, and others. Cuttings of it put in a mixture of sandy peat and loam strike freely.—ALPHA.

5221.—**Chrysanthemums in small pots.**—I presume from the remarks of "Myrtle Grove" that his *Chrysanthemums* will by this time be bushy plants with from five to ten shoots on each, and thoroughly pot-bound. If left in such small pots as 5-inch ones, it is impossible for them to produce anything like good heads of bloom and retain their foliage in good health. It would have been better if they had been potted into larger pots before now, but it is not yet too late to pot them, provided it is done at once. I should put them in 8-inch or 9-inch pots, using a compost consisting of two parts good sound loam and one part rotten manure well chopped up with the spade and mixed together, but not sifted. Good drainage should be secured, and in potting the potting-stick should be used freely, for there is no class of plants that like hard potting more than *Chrysanthemums*. When they have all been potted they should be staked; each shoot should be tied to a neat stick and given plenty of space for sun and air to thoroughly mature the wood, good hard well-ripened wood being one of the most important points in the successful cultivation of the *Chrysanthemum*.—H. PARKER.

Watering Liliun auratum.—Having noticed a remark in *THE GARDEN* of August 2 in reference to watering *Liliun auratum*, allow me to say that I have one in bloom at present which has stood in a saucer of water since the shoots were a foot high. There are three shoots more than 64 feet high, and there are twenty-five blooms, each measuring over 6 inches across. It is grown in an 8-inch pot.—D. B., *Dublin*.

Finely grown Fuchsias.—I have seen no such perfectly trained and bloomed *Fuchsias* as I saw the other day at the St. Neots show since Mr. D. T. Fish took a first prize with some grand plants of them at the Bury St. Edmunds show in 1868, when the Royal Horticultural Society visited that town and pitched its tents in the vineyard there. The first prize plants at St. Neots were at least 8 feet high and well bloomed, the drooping branches hanging over the pots in a graceful manner. They were exhibited by Mr. Redman, gardener to Mr. J. H. Goodjames.

Francoa ramosa.—This plant is invaluable at this time of year for conservatory or other indoor decoration. It produces long branched spikes of the purest white flowers; therefore plants of it even in small pots make a good display, and for association with bright colours it is invaluable. It is of the easiest culture. Seeds sown as soon as ripe in autumn in a pan or box and kept near the glass in a cool house produce sturdy plants for potting off singly in spring, when they may be grown on in cold frames until the weather is sufficiently warm for them to be set out of doors in a partially shaded position. Some of them will probably blossom during the autumn, but all will make fine plants for flowering the second year. A mixture of loam, manure, and sand suits them perfectly, and if kept well furnished with water and an occasional supply of liquid manure, it is surprising the quantity of bloom which a plant in a 6-inch or 7-inch pot will carry. As window plants they are unrivalled; their leaves withstand dust well, and falling down they completely cover the pot, while the branched spikes shoot upwards 3 feet or 4 feet, covered with flowers so profusely as to gain for the plant the appropriate name of Bridal Wreath. They are specially well suited for amateur gardeners, as they only require the coolest of greenhouse culture in winter; in fact a frame with covering enough to exclude frost is just the place for them. Anyone who can grow Calceolarias will find no difficulty in growing this useful plant.—JAMES GROOM, *Gosport*.

LARGE LEAVES.

ATTENTION was directed in THE GARDEN the other day to a few large-leaved plants; allow me, therefore, to note a few others. First in point of noble port stands the truly gigantic *Gunnera manicata*. The specimen here referred to has at the present time sixteen leaves, some of which measure quite 8 feet across, on stems about 5 feet high. The whole plant is as near as possible 18 feet in diameter, and doubtless owes its high state of development to the conditions under which it is growing. It is planted close to the edge of a pond—in fact in the water. The ground rises slightly from the water, and the slope behind the plant is made up of rich soil, and receives liberal manurial top-dressings annually. *Verbascum olympicum* is another remarkable plant when well planted. A specimen of it here—planted in rich, deep, moist soil—measures 6 feet across and has seventy-eight leaves. When it is remembered that its leaves resemble fustian as near as possible, it will be readily seen what a distinct and handsome plant this *Verbascum* is. I shall be curious to see the stem-development next season of this huge plant. Siebold's Plantain Lily (*Funkia Sieboldi*) treated as a sub-aquatic in rich soil is a noble plant. A specimen of it here has very large leaves. This *Funkia* should be well planted at first and afterwards let alone, as it goes on increasing in size and vigour for many years. *Sambucus nigra macrophylla*—called also the Cauliflower Elder—planted in rich, moist soil, attains extraordinary dimensions, especially if annually cut well back. It then produces shoots 6 feet long, and makes a specimen as many feet through; the leaves are 18 inches long, and the flower-heads 1 foot or more across—a right good subject for the shrubbery or wild garden. Is the Golden Elder not a form of this plant? T. S.

Newry.

Notes from Craigleith Nursery.—Amongst the many stove plants of interest in Messrs. Ireland and Thomson's nursery, near Edinburgh, are several American hybrid *Nepenthes* possessing much beauty. In the same house is a rare, though not new, *Melastomaceae* plant, *Sphaerogyne latifolia*, with shaded leaves nearly 1 foot across and about 1 foot long, which when seen from above are most effective. The *Sonerilas* are a pretty group with variegated foliage, *Hendersoni*, *argentea*, *margaritacea*, *amœna*, *Nelly*, and *Rita* being especially good kinds. *Selaginella*

amœna is one of the best of the *Selaginellas*; and another plant worth growing is a bright orange and scarlet *Asclepias curassavica*. The collection of Orchids seems to be larger than that in any of the other Edinburgh nurseries, but at this time of year only a few are in blossom.—C. M. O.

TREES AND SHRUBS.

THE CATALPAS.

THERE are about half-a-dozen species belonging to the genus *Catalpa*, four of which are highly ornamental trees. These hail from North America, China, and Japan, and, in the south of England at any rate, can fairly claim to be classed amongst hardy subjects. The others, from the West Indies, are tropical plants, and therefore would be out of place here. *C. bignonioides* (the *Catalpa*, or Indian Bean) is by far the best known and most widely grown. Its panicles of large

five-lobed spreading border; the colour is white more or less tinged with violet and speckled with purple and yellow in the throat. It was first discovered by Catesby in South Carolina, and was introduced to this country in 1726. In a wild state, according to Professor C. S. Sargent's "Catalogue of the Forest Trees of North America," it occurs in Western Georgia, Florida, and perhaps west to Louisiana.

Its very light, close-grained, remarkably durable wood is valuable for fence posts and cabinet work; its specific gravity when perfectly dry is .405. Under cultivation in this country it rarely attains more than 30 feet or 40 feet in height, but the Syon specimen figured by Loudon measured 52 feet in height and the trunk 3 feet in diameter, the spread of the branches being 50 feet. A noble tree in the garden of Mr. Denne Denne, of Canterbury, was figured in the *Gardener's Chronicle* in 1876; this was only 32 feet high, but the branches had a spread of 60 feet.



Flowering shoot of *Catalpa bignonioides*.

handsome flowers and the large light green leaves give it a totally distinct aspect—one widely different from that of any other outdoor tree. Moreover, it flourishes even in the smoke-laden atmosphere of towns, retaining its leaves after those of a good many other deciduous trees have fallen or become discoloured. It is also a fast-growing tree, and in its native country furnishes remarkably durable and valuable timber. The *Catalpas* are readily raised from seeds or root cuttings.

C. BIGNONIOIDES * has heart-shaped leaves, pointed, downy beneath, and the flowers are borne in open compound panicles. Its slender, nearly cylindrical, seed-pods are not unfrequently produced in the neighbourhood of London. These measure about a foot in length, and remain hanging on the tree until the following spring. The bell-shaped two-lipped corollas have an irregular

When in flower this tree resembled "a mass of snow, enlivened with rich yellow and brown mottlings." It would be very interesting to know how many of the *Catalpa* trees mentioned by Loudon in his "Arboretum" are now in existence, and details of present measurements would be of great interest and value. This species no doubt attains a maximum size in rich deep somewhat moist soil, but it forms a very handsome tree and flowers and grows freely in dry sandy gravel. At Kew in very poor dry gravelly soil specimens are now in full flower, and the large handsome leaves show no trace of the effects of the heat and drought which are only too evident in the case of several other deciduous trees.

VAR. AUREA is one of the best golden-leaved trees or shrubs in British gardens, as it retains its golden yellow hue throughout the season.

VAR. ERUBESCENS (Carrière, *Revue Horticole*, 1869, 460) is a form—probably a seedling from the common Indian Bean (*C. bignonioides*)—with a more compact inflorescence, larger, more highly coloured corolla, with a less deeply divided limb.

* *C. bignonioides*, Walter, "Flora Caroliniana," p. 64 (1785); Gray, "Manual of the Botany of the Northern United States," p. 321; Koch, "Dendrologie," zweiter theil, erster abtheilung, p. 302. *C. syriacifolia*, Sims, *Botanical Magazine*, t. 1094; Loudon, "Arboretum et Fruticetum Britannicum," vol. iii., p. 1261; "Encyclopædia of Trees and Shrubs," p. 662.

C. SPECIOSA (Engelmann, in Coulter's *Botanical Gazette*, January 1, 1880).—This is a recent addition to British arboreta, and probably has not yet flowered in this country. It is, however, likely to prove valuable, and the following extracts from the late Dr. Engelmann's paper seem worth reproducing here: "This tree has quite an interesting and instructive history. It was already known to Michaux and to many botanists and settlers of those regions. Even the aboriginal Shawnees appreciated it, and the French settlers along the



Foliage of the Catalpa.

Wabash named it for them the Shawnee Wood (Bois Chavanon), and prized the indestructible quality of its timber; but the botanists, even the subtle Rafinesque, who roamed over these very regions seem to have taken it for granted that it was not distinct from the south-eastern *Catalpa bignonioides*. To me the fact that these trees, then not really cultivated in St. Louis, produced their larger and more showy flowers some ten or fifteen days earlier than the eastern or common kind was well known as early as 1842, and their blossoming has since been annually recorded in my notes on the advance of vegetation, but I had not the sagacity or curiosity to further investigate the tree. It was reserved to Dr. J. A. Warder, of Cincinnati, to draw public attention to it."

"*Catalpa speciosa* replaces *C. bignonioides* entirely in the Mississippi Valley. It is readily distinguished from it by its taller and straighter growth, its darker, thicker (half an inch to 1 inch), rougher, and scarcely exfoliating bark (in the older species it is light grey, constantly peeling off, and therefore not more than 2 lines or 3 lines thick); its softly downy, slenderly acuminate, and inodorous leaves (those of *C. bignonioides* have a disagreeable, almost foetid odour when touched), marked with similar glands in the axils of the principal veins of the underside; by its much less crowded panicle, and by its much larger flower, fruit, and seed."

"Our tree is larger, of straighter growth, and being a native of a more northern latitude, is hardier than the south-eastern species. The wood of both is extremely durable, perhaps as much so as that of our Red Cedar, and has the advantage over it of a more rapid growth and of possessing only a very thin layer (two or three annual rings) of destructible sapwood. But of these qualities and of its adaptability to many important uses others, and especially Mr. Barney in a recent pamphlet, have given a full account. It is already extensively planted in our western prairie States, and especially along railroads, for which purpose it is expected to furnish the much-needed timber in a comparatively short time."

Professor C. S. Sargent in correcting an error which had arisen in the *Gardeners' Chronicle* with respect to *Catalpa speciosa* writes: I take this occasion to call the attention of European planters to this species. It is in every way a far finer and a more rapid growing tree than *Catalpa bignonioides*, and should it succeed in Europe, as from its geographical range in this country I am led to believe that it will, it will prove a most valuable

addition to the list of ornamental and timber-producing trees. Its distribution in a wild state is given by the same authority as Southern Indiana and Illinois, Western Kentucky and Tennessee, South-eastern Missouri, and possibly southward through Louisiana. Its wood is rather heavier than that of the last species, its specific gravity being .462; it is valuable for cabinet work, and almost imperishable when placed in contact with the soil; it is largely employed for railway ties, fence posts, &c. A large tree in rich bottom-lands, often 80 feet in height, with a trunk 4 feet in diameter; one of the most valuable trees of the American forests.

*C. KEMPFERII** is a native of Japan, where it was discovered by Kämpfer in 1693 and introduced by seed into Belgium in 1849. It is a close ally of the American species already mentioned, and is one of the most striking of the many instances of that intimate relationship, due to common origin, of the plants of the Atlantic, United States, and Eastern Asia, which is not shared by the plants of the Pacific coast States. The leaves are smaller, cordate at the base, 6 inches long and broad, bright pale green; the round petioles measure from 2 inches to 5 inches in length. The panicle is erect as the leaves; the flowers are smaller than those of the American species, of a pale yellow colour sprinkled with minute red spots. Probably this species hardly attains more than 12 feet in height.

C. BUNGEI, † a native of N. China, differs from

mose inflorescence, and nearly glabrous, generally entire, ovate, acuminate leaves. Now and then entire and lobed leaves are found on the same plant, and then it is the variety *heterophylla*. There is also mention made in catalogues of a variety *nana*, but *C. Bungei* itself is a dwarf shrub in British gardens, and at present I know too little of both type and so-called variety to determine whether they are identical or not. The flowers are described as greenish yellow with red spots.

GEORGE NICHOLSON.

Royal Gardens, Kew.

SCOTTISH ARBORICULTURAL SOCIETY.*

THE members of this society held their annual summer excursion on the 7th, 8th, and 9th inst., when Taymouth, Fortingall, Castle Menzies, Athole, Scone and other interesting places in Perthshire were visited. This was the seventh excursion held under the auspices of this society, and of these no fewer than four have been to Perthshire, thus showing the importance which foresters and others attach to the woods and forests of that country.

TAYMOUTH.—On Thursday morning a start was made for Aberfeldy at 6.40, the various objects of interest along the route being carefully pointed out and explained. Amongst the first objects of interest to attract attention was the splendid plantation of purely Douglas Firs immediately on the west side of the railway at Taymouth. This plantation is of about thirty years' standing, and



A full grown Catalpa bignonioides.

those species previously mentioned in its race—

* *C. Kämpferi*, Siebold and Zuccarini, "Flora Japonica," sect. alt., p. 18; *Illustration Horticole*, 1862, p. 319. Koch, "Dendrologie," zweiter theil, erste abtheilung, p. 303; *Botanical Magazine*, t. 6611. *C. ovata*, G. Don, "History of Dichlamydeous Plants," iv., 230. *C. Bungei* of gardens, not of C. A. Meyer. *C. himalayensis* of gardens.

† *C. Bungei*, C. A. Meyer; De Candolle, "Prodromus," ix., 226; Koch, "Dendrologie," zweiter theil, erste abtheilung, p. 304.

the Larch "nurses" were all removed a considerable time ago. Even before the character of the plantation was made known, its fine healthy appearance attracted attention, and it was greatly admired. At Logerait the enormous Ash in the hotel-keeper's garden was eagerly watched for, and a good view of it was obtained. This tree is now a comparative wreck, but, maimed as it is, it has

* Abridged from the *Perthshire Constitutional*.

still the enormous girth of 47 feet 7 inches at a foot from the ground, and 32 feet 5 inches at 5 feet; so that in its perfect state it must have been a very large tree indeed. A wide gap in the trunk has been taken advantage of to form a summer-house sufficient to hold a large party. On arriving at Aberfeldy the party started for Taymouth. The road between Aberfeldy and Taymouth Castle is one of the most beautiful in the county, and this part of the drive was greatly enjoyed. For several miles the road is almost completely under a thick leafy shade, with openings here and there, revealing the clear, sparkling waters of the Tay, cultivated fields and grazings, the tree-clad heights of Weem and Drummond Hill, and the dark blue mountains lying against the sky in the distance. A fine row of Oak trees on the south side of the road was specially admired on account of their luxuriance. At Taymouth Castle the party was received by Mr. William Dunn, land steward, who pointed out the more interesting arboreal features of the property. The grounds at Taymouth are remarkable for the size and number of their gigantic old trees. Amongst those which attracted special attention were the four famous Spanish Chestnuts at the Rail Bridge which spans the Sawmill Burn in front of the castle, the largest of which girths close upon 19 feet at 5 feet from the ground. The height of these trees is from 70 feet to 80 feet, and each contains about 460 cubic feet of timber. Several splendid Larches were measured, the best of the lot girthing 11 feet at 5 feet from the ground, with a height, as measured by Mackenzie's dendrometer, of 128 feet. An Ash, with a girth of 16 feet 6 inches at 5 feet from the ground, was also the subject of much commendation, as well as the three Oaks and three Scotch Firs planted by the Queen, Prince Albert, and the Empress Eugénie, all of which are thriving well. Behind the castle there is a double row of grand Lime trees, forming an avenue in the shape of the letter D. In this the best specimens girth 15 feet at 5 feet from the ground.

FORTINGALL.—The drive was continued along the shores of Loch Tay, by the back of Drummond Hill, to Fortingall, some of the party making a detour a short way up Glenlyon to the "Macgregor's Leap." On arriving at Fortingall, the famous Yew was carefully examined, the gate of the churchyard having been kindly thrown open by the Rev. D. Campbell, who has charge of this venerable relic. This famous Yew is calculated by the best authorities to be over 3000 years old, and although from the outside of the enclosure it has the appearance of being in vigorous growth, it is in reality a mere shell. The only available parts remaining are the outermost portions of the old trunk, representing its growth long after it had become a shell, and consequently impaired in vitality. About the beginning of the present century the tree was in a much more complete state than it is at present, considerable dilapidation being occasioned by boys lighting fires at its roots. An early drawing represents the gap in the trunk so wide, that a funeral is passing through it, the remark being made that this was the practice when funerals entered the churchyard. Mr. Magnus Jackson, the society's photographer, made photographs of this, one of the most remarkable trees in the world, from different positions.

F' CASTLE MENZIES was the next place visited, and as the members were led to regard the grounds here as being entitled to the premier place for trees in Scotland, expectation ran high. Nor were they disappointed, either with what they saw or with the reception they received. On reaching Farleyer, the residence of Sir Robert Menzies, the party was most hospitably entertained. Sir Robert, Mr. Ewing (the gardener), and others conducted the party over the property, in which several hours were most profitably spent. The first tree to attract attention was the splendid Sycamore, a little to the west of the castle, believed to be the finest in Scotland. Although it is now isolated, it originally formed part of the avenue which led to the old castle. The girth at 1 foot up is 24 feet, and at 3 feet, 21 feet; at 5 feet, 18 feet; and at

7 feet the girth is 17 feet. There is a bole of between 30 feet and 40 feet, and an entire height of 96 feet. The tree contains, according to the estimate of a wood merchant present, fully 700 cubic feet of marketable timber, including the branches. A great limb was broken off during the memorable gale of December 28, 1879, but the tree is very little disfigured in consequence. Its companions in the old avenue have been less fortunate, as they have been considerably wrecked by the gale of 27th January last, the outside trees being completely blown down, and some of them broken off at the top. A very notable feature of the trees at Castle Menzies is their great height, as well as their extraordinary girth. One of the tallest of the trees is a magnificent Silver Fir which Mackenzie's dendrometer showed to be 128 feet high, with a girth of 15 feet at 3 feet from the ground, and a grand specimen all over. Another Silver Fir reaches 103 feet, with a girth of 13 feet 6 inches at 3 feet. The best Oak, regarded as a timber tree, which was seen during the day, was one which reaches fully 100 feet in height, with a splendid bole of 60 feet, and a girth of 9 feet 9 inches at 5 feet from the ground. Another Oak which excited some curiosity was one with a white branch, the variegation having been there as long as anyone can remember, and is supposed to be the work of an insect. The *Wellingtonia gigantea*, supposed to be the largest in Britain, also received a good deal of notice, and was carefully measured and found to girth 14 feet 4 inches at the ground and rise to a height of 48 feet. When the tree was measured in May, 1883, the girth was 13 feet 7 inches. This tree was amongst the first sent out from London, and although it was no bigger than a man's hand, it cost the extravagant sum of £33s. It was kept in a pot for a couple of years, and planted out in the garden in 1858. The rarer trees noticed included a well-grown specimen of *Pinus muricata*. The *Abies Albertiana* which has supplied seed for all the trees here of this species was also greatly admired, its height being 63 feet. A very shapely *Abies Menziesi* has a height of 83 feet and girths 9 feet at the ground. Before leaving the ground, Sir Robert invited the party to visit the interior of Castle Menzies—a privilege which was readily taken advantage of. The apartment which attracted most attention was the old drawing-room, with the original ceiling, showing the thistle, rose, harp, and *fleur de lis*, and containing a chair and box which had belonged to Queen Mary. The walls of this part of the castle are 9 feet thick, and are lined with Scotch Fir, which has kept so well that it is as fresh as when it was put in 300 years ago—the castle having been built in 1571.

ATHOLE WOODS.—On Friday morning the party left Aberfeldy for Ballinluig, where conveyances were in waiting to convey them through the famous Larch plantations of Athole, under the guidance of Mr. M'Gregor, the head forester, and Mr. M'Laren, the land steward. After leaving the station, they turned up the Tullymet Road, which rises to a considerable height, and affords a magnificent view of Strathtay. At Tullymet plantation, which was laid down in 1817, some fine self-sown Larch trees of considerable size were pointed out. All along the Braes of Tullymet, which were next ascended, it was observed that the Grass under the Larch was very luxuriant, although, as Mr. M'Gregor stated, the ground had been entirely moorland before the Larch was planted. This led Dr. Cleghorn to explain that the Larch, which is a deciduous tree, was especially valuable for turning Heather into Grass, as the leaves proved such an excellent fertiliser that the Grass soon grew so abundant that it killed the Heather. On reaching the entrance to Tullymet House the road turns to the right and passes the Milltown of Tullymet. At the Meadow of Tullymet it was pointed out that the land here was formerly a valueless swamp, but had been reclaimed by Duke John, and is now excellent agricultural land. At Baledmund Bridge the parish of Logerath was left behind and the parish of Dowally entered, from which point the whole of the land on to Dunkeld is on the Athole property. A little further on a private road led to the classic Loch Ordie, lying 1000 feet above the level of the

sea, and the historic Larch plantation which surrounds it, consisting of 3000 acres, planted in 1816, the history of which is detailed in "The Woods and Forests of Perthshire." On arriving at the Loch the entire party were loud in their admiration of the beautiful scene, and the very excellent way in which the woods are managed. After luncheon Dr. Cleghorn said that they had had the great privilege of visiting one of the most interesting places in Scotland. They all looked to the Dukes of Athole as the pioneers of Scottish arboriculture, and before they separated they must express their sense of the gratification they had had, and of the kindness, courtesy, and hospitality which had been shown them by the Duke of Athole and his mother, the Duchess-Dowager, and he asked Mr. M'Gregor to convey these sentiments to the Duke and the Duchess. Mr. Mackay, of Glengloy, remarked that this was the most important place they had yet visited from a practical point of view. They were there to forward forestry in this country and all over the world, and here they saw for themselves what was being done. They not only saw those grand Larch plantations, but they had the whole history of them at their command, and the books of the Duke of Athole were so well kept that they could tell exactly what the plantations cost, and what revenue they yielded. The party were next conducted to the top of Ben Deucharie, 1600 feet above the level of the sea, from the top of which a most magnificent prospect was obtained, the entire Larch plantations of Loch Ordie being in full view, the lower grounds including a view of Strathtay, with the junction of the Tay and the Tummel, and the higher grounds including the peaks of Mount Blair, Ben-y-Vrackie, and surrounding mountains. The road now lay past Cally Loch, where some very rare trees and Rhododendrons were noticed, to the ancient city of Dunkeld. The grounds of Dunkeld House were entered at the North Lodge, and the party were met by Mr. Fairgrieve, the gardener. Immediately on entering the party was in the midst of trees that claimed its attention. One of the most notable of these was a Larch which rose to a height of 120 feet, with a girth of 11 feet at 5 feet, and containing about 300 cubic feet of timber. The great centre of attraction was the parent Larches at the west end of the cathedral, and which were planted in 1738. The present girth of the larger one is as follows: At the base, 27 feet; at 1 foot up, 22 feet 7 inches; at 3 feet, 18 feet 9 inches; and at 5 feet from the ground the girth is 14 feet 11 inches. There are only four moderately strong branches throughout the entire tree, which has a height of fully 100 feet. Both trees are in splendid health, and are still making wood. Near to the parent Larches is a beautiful variegated Plane tree (*Acer Pseudo-platanus albo-variegatum*) with a fine upright habit of growth, and girthing 9 feet 3 inches at 4 feet up, with a height of close on 70 feet. There are also some splendid Yews and a magnificent Oak close to the parent Larches, the latter having a girth of 12 feet 6 inches at 5 feet, with a bole of 30 feet and a height of about 100 feet.

SCONE AND LYNEDOCH.—On Saturday morning the party proceeded to the property of the Earl of Mansfield at Scone and Lynedoch. Mr. M'Corquodale, Mr. C. S. France, and Mr. M'Kinnon acted as guides, and spared no exertions in conducting the visitors to all the objects of interest. The great centre of attraction for all were the parent trees of *Abies Douglasi* at Lynedoch, and these were first inspected. The route was by Almondbank, and a halt was made to enable the strangers to see the view from the top of Almond Rock, beneath which the river roars at a depth of about 200 feet, with the dark woods of Methven as an effective background to the fine undulating plain. A short stoppage was also made at Craighbank House, where the rock also commands a splendid view of the tortuous course of the Almond. At Lynedoch some curiosity was manifested to see the foot bridge which Mr. M'Corquodale had thrown across the Almond, and a model of which is being exhibited at the Forestry Exhibition.

When the original trees of *Abies Douglasi* were shown, it was acknowledged by all that their expectations had been more than realised—one gentleman remarking that it was worth a journey of 50 miles to see them alone. Both of these trees were planted in 1834—exactly fifty years ago—and already they contain 180 cubic feet and 178 cubic feet respectively. The larger one girths 10 feet 4 inches at 4 feet, and the other girths 9 feet 10 inches at 4 feet. The tree from which the cones are taken is surrounded by a simple, but ingenious fence, which effectually keeps out squirrels, the fence being copped with zinc, so that these destructive animals cannot pull themselves over. These trees are not only the largest of their kind in the country, but there is no tree known which makes so much wood as these do, the annual growth being about $3\frac{1}{2}$ cubic feet each. Beside them is a very fine Silver Fir, girthing 13 feet 6 inches at 5 feet up. After inspecting all the other notable trees here, carriages were again summoned, and a start made for Scone *via* Waulk-mill Ferry. After crossing the river, the party were conducted on foot through Drumshogle Wood, a fine Oak plantation, with a few Spruce and Larch, laid down about sixty years ago. It was noticed that there was no strong rambling side shoots on the Oaks, these having been fore-shortened and the tops balanced while the trees were young, giving them now a very shapely appearance, and reducing the danger of their being destroyed by wind or snow to a minimum. On the public road here a grand avenue of purple Beech trees was greatly admired. On reaching the grounds the party partook of luncheon, after which they again inspected the trees. Amongst those which attracted special attention were Queen Mary's Sycamore and the Oak and Sycamore planted by James VI. In the pinetum the rarer specimens of the newer *Coniferae* were carefully examined, and their proportions and peculiarities noted. The gardens were also visited, and the beautiful manner in which both the grounds and the extensive houses are kept was the subject of general comment.

The excursion, which was the most ambitious that has been organised by the society, proved in every respect most successful, profitable, and enjoyable. The weather throughout the whole of the three days left nothing to be desired, and the arrangements were so complete and exact that there was not anywhere the slightest hitch—a circumstance which is most creditable to the secretary of the society, Mr. John M'Laren, jun., and the members of committee, whose labours in organising such an excursion were necessarily of a very arduous character.

Diervilla trifida.—The Weigelas have blossoms of different shades of white, rose, or crimson, while this *Diervilla*, to which they are closely related, bears yellow flowers. It is altogether a smaller growing shrub than any of the Weigelas, but is equally floriferous, though the blooming season does not extend over so long a period as it does in the case of some of them, being generally limited to the months of June and July, nor, in fact, are the individual blooms so showy. It is a very old plant in gardens, having been introduced as far back as the middle of the last century, but it is now comparatively rare. This *Diervilla* is a native of North America, while the Weigelas are from Japan, but both the genera succeed under the same treatment.—W. T.

A GLIMPSE AT A LONDON GRAVEYARD.

A CORRESPONDENT, signing himself a "Countryman," sends the *Pall Mall* the following: Being in London a few days since, and feeling half stunned by the incessant roar of its noisy street traffic, I wandered into a side street near the railway station from which I intended soon to depart. Seeing an open gateway with trees and grass beyond, and children and adults entering it, I followed them, and found that a disused graveyard had been converted into a bright and pleasant spot, where recreation and rest might be had even in

the midst of noisy London. While enjoying the shade of the beautiful trees and the quiet and seclusion of the place, I saw over the boundary wall a large building among the trees of another and apparently similar garden. It seemed to me somewhat like an iron church or lecture hall, but on enquiry I was told that it was a dissecting room, and that its site was a disused, and I may say misused, burial ground. Curiosity prompted me to visit the desecrated spot, and following a medical student, as I suppose, I entered the ground. A strange sight met my view. Gravestones, broken and entire, were inclining at all angles amidst rank grass and weeds, dilapidated brick vaults and the aforementioned chamber of horrors—the dissecting room. A group of embryo surgeons were collected round a tomb, and as I came in sight a coin spun up from the hand of one in a fashion equally well known to cricket players and to the corner-men of Drury Lane. Apprehensive of being challenged as an intruder and forcibly ejected, I endeavoured to bring all my rustic simplicity into my features and carriage, and was allowed to pass without debate. The ground is pretty spacious, perhaps measuring an acre and a half, and contains some fine trees and beautiful tombs, some of the latter with armorial bearings. Well out of sight of the students I continued my explorations, and to my disgust found three brick vaults so broken that into each one a man might easily enter. Into one an old mattress had been thrust; a second seemed a receptacle for rubbish generally, a jam bottle being its most prominent furniture; while a third appeared to have been cleaned out entirely, one bone lying just outside it. No trace of human bones was visible inside any of the three. Whether mischievous boys, hungry dogs, or scientific osteologists have a right to the praise or blame of the clearance I cannot decide. I state only what I saw. To me it seems a scandal and a disgrace that ground paid for by private purchasers, and in all probability consecrated by a bishop and hallowed by the grief and tears of many mourners, should become an abomination of desolation and a horror to those who know of its perversion. The ground is said to be let by the clergyman in charge for the use of the anatomist. I wonder what is the opinion of the clergyman as to the decency of the transaction. And, lastly, I wonder if the freeholders of the graves and the public generally intend to let the desecration continue.

MR. GLADSTONE ON GARDENING.

At the Hawarden flower show the other day Mr. Gladstone spoke as follows in reference to village societies: "A village society," he said, "is a very quiet thing, and attracts very little notice, but it does an enormous deal of good. Look at it which way you will, it does good. First of all, it is a great incentive to a truly, I may say, a very virtuous industry, because the interesting part of these societies and shows—a part which, I am happy to hear, is a very large one here—is that part coming from the cottagers and the labouring population of this country. I once from this place advised farmers to think whether they could not turn their attention to the subject of the cultivation of fruit and flowers, and other such things, and I am happy to say that that cultivation is beginning to spread in the country. It is not a thing of course to be run into without consideration, because it will require a great deal of arrangement, a great deal of capital, and a great deal of industry before it can be done on a large scale. But it is growing, and the more it does so the better it will be for us all. You cannot increase the quantity of food too much in this country, for the number of mouths to eat it is increasing continually; and though I am a free trader, and very glad that lots of food should come from all countries in the world, yet certainly if I had the choice I would rather have it grown in this country. The farmers are a very important class. They have had great difficulties, and I trust that the grand season now given us will do something at least towards a better turn in their affairs. I rejoice to think that all those who buy their bread are likely to have plenty of it, good in

quality, and low in price, and that is an enormous blessing to the country. But as regards the cultivation of your little gardens and your fruit, I hope that we shall never rest until every cottage in this country has a garden. I rejoice to see that most of them have gardens now, and I hope all will use them properly. It is an extremely profitable undertaking. There is probably no labour better invested than the labour of cottagers in their own gardens. The proceeds they get by industry and skill for a comparatively small amount of work are very large, and the work, though it is labour, yet is a very interesting labour, a labour accompanied with a great deal of pleasure, for there is not one of you who does not heartily enjoy seeing the growth of what has been planted. It is a labour which is excellent for the mind and the body, and it is a labour which is useful to the community, because it increases the quantity of what is useful and beautiful. Let nobody despise the cultivation of flowers. There is nothing more touching in this country than to see how human nature clings to beauty in its most delightful form, and how, even in the midst of our most densely crowded towns, the people try, if they can, to cultivate flowers to put them in their windows. These are excellent pursuits, and we rejoice to see and know on every side that they are flourishing."

ROSE GARDEN.

AMONGST THE ROSES.

WHETHER we shall get the full crop of autumn Roses which Mr. Fish (p. 103) seems to expect is doubtful. The heat during the past few days has been excessive, and the rainfall insufficient to moisten the roots. Our Roses, indeed, look parched, and unless we get a heavy rainfall shortly with a diminution in temperature, we shall have but few autumn Roses. To irrigate the roots as they should be is, in our case, quite out of the question. But there are hopes for those who can, for if the roots are plentifully supplied with moisture, Roses revel in a high temperature. Therefore, I say to all who can, irrigate liberally, and if done without any delay, a fair harvest of autumn Roses may be looked for. If some stimulating liquid, too, from the farmyard tank or sewage water can be had, it should be used in preference to clear water; anything more forcing should, however, be used cautiously, for any of the concentrated manures, if used in excess, may do mischief by promoting a quick and succulent growth that would not have time to get hardened before winter. Roses may also be further helped by having the dead and decaying flowers removed and any weak and exhausted branches cut out, at the same time avoiding anything like systematic pruning. On some plants there will be long, vigorous shoots that are monopolising all the strength from the roots. These should be shortened back to about half their length, and any weak and useless shoots that will have to be cut away at spring pruning time may with advantage be removed now. Thinning out the flower-buds must likewise be attended to shortly if large, well-formed flowers are required. Already I notice that on the strongest shoots of such varieties as *Souvenir de la Malmaison*, *La France*, *Victor Verdier*, and others noted for late flowering there are more buds at the ends of the shoots than they can be expected to mature and expand. Where there are five buds thus placed they should be reduced to two, and larger numbers in proportion.

LAYERING ROSES.—Dwarf Roses on the *Manetti* stock if planted in beds with a view to form masses may be converted into own-root plants, and thus save the annoyance of the loss of plants which frequently occurs when the stock just named is used. The operation of layering is very simple, but it is best not to commence until the end of September, by which time the wood will have got sufficiently hard to bear bending. Then select the longest and strongest shoots, and gently bring the top down to a vacant place between the plants. Remove the soil to a depth of 2 inches;

then press the shoot down, leaving a few inches of the end out of the ground, and with a strong wooden peg fix the shoot into the earth, putting back the soil and pressing it firm about the shoot. No cutting or notching of the shoot is necessary; if it is buried beneath the soil and firmly fixed there it will in due time form roots, and ultimately develop into a plant capable of sending up from the crown vigorous shoots, which if desired may in their turn be dealt with in the same way. Thus in the space of a few years beds first planted with Roses worked upon any other stock may be made to have an existence independent of the roots that first nourished them. A good deal may be said respecting this way of securing own root Roses, and a strong argument in its favour is that large plants of own-root Roses strong enough to flower well the first year are difficult to get, while any number of plants with foster roots may be had without a very great outlay, and with a fair prospect, if properly treated, of their flowering well the first season after planting. The best argument in their favour, however, is the fact that own-root Roses defy frost, while those with foster roots are liable to suffer from it. In the case of own-root Roses the frost may injure or kill the branches, but it will not harm the roots or the crown of the plant which is below the soil. Even the tops may be preserved if a little timely protection is afforded them.

ROSES RENEWING THEMSELVES.—It may be useful at this season of the year to direct attention to the way in which all Roses renew themselves. This trait in their character is perhaps more noticeable in climbing or large bush plants than in others, but the same thing happens in the case of those grown as dwarfs and to a limited extent in that of standard forms. I allude to their throwing up (sometimes annually) strong, vigorous shoots from near the crown of the plant. I have often been surprised to see the way in which these latent buds start into life from old, hard wood; the same thing, moreover, happens so frequently that we may take it for granted that Nature intends the cultivator to utilise these growths by allowing them to take the place of branches that have become exhausted. If that was not so, surely they would not appear where they do. Allow me, therefore, to impress upon the inexperienced the necessity of preserving these shoots by allowing them to remain upon the plant, and at the annual pruning to cut away sufficient of the old wood to make room for them. As an example I may mention Gloire de Dijon as a Rose that almost annually sends up one or two of these strong shoots, and it will be found that if preserved they produce much larger flowers and more numerous than does the old wood. Dwarf bushes also renew themselves in the same way, and these shoots should always be retained in preference to older wood.

J. C. C.

Churchyards for recreation.—The Metropolitan Public Garden, Boulevard, and Playground Association applied to the Board of Works for the Limehouse District to take over the Stepney Churchyard, Limehouse Churchyard, St. James' Churchyard, and Shadwell Churchyard, under the provisions of the Metropolitan Open Spaces Act, 1881, and dedicate them to the enjoyment of the public. The Board have refused to comply with this request.

The pollution of the Thames.—Is there not a Rivers Pollution Act? Then why are paper mill owners permitted to destroy so many of our rivers? They change what is one of the loveliest of Nature's charms—a clear, crystal stream—into a dirty, frothy liquid, unfit to boat upon and destructive to fish living in it. One cannot imagine fish living in a stream whose surface is for ever covered with scum of the nature of soap-suds, while the water itself is from time to time polluted to the extent of being quite opaque and milky white from the amount of matter cast into it. This, I have observed, occurs late in the evening, so that on the following day all seems as usual, except that the graceful Reeds, Rushes, and flowering plants on the banks have lost their beauty; for wherever the polluted flood has touched them they are covered with a white deposit. What this may be the mill-owner knows best. I know more than one of "Thames tributaries," and what lovely "sedged brooks" they are. It does seem sad that a few men should be allowed to destroy them. It may be remarked, too, that these clear streams which tempt the paper-maker to wash his dirty rags in and to carry away his refuse all flow into the Thames above the point from which London takes its water supply. It has been well said that a river should be a public garden, and not a public sewer.

—HAMO THORNTON, in *Pall Mall Gazette*.

KITCHEN GARDEN.

KITCHEN GARDEN NOTES.

Wordsley Wonder Pea.—This Pea merits all that can be said in its favour. I have grown it extensively this season, and have been quite satisfied with it. Your reporter was doubtless right in saying that some of the dishes of it shown at South Kensington from southern counties were rather old, as my third-prize lot was gathered from some rows from which we had picked pods four weeks previous, and I think it a recommendation that it should remain so long useful during the hottest of our summer months. This variety grows very robustly, attains a height of about 4 feet, pods profusely all over, and although the pods are narrower than in the case of some varieties, they are not surpassed by any as regards being well filled. Their colour, too—a dark green—is good, and also their flavour.

Horn Carrots, when from 2 inches to 3 inches long and the same in thickness, are much prized in autumn and winter, as they are so tender and sweet—vastly different from old full-grown Carrots. In spring these little ones are common enough, but in autumn and winter they are rarities. They need not, however, be so, as they can be easily cultivated to come in at these seasons. The French Horn is one of the best to sow just now; it soon acquires the proper size. Very good ones may be grown on a south border where the soil is rich and free. If drills are opened every 15 inches apart, the seed sown thinly, and then covered over with a light soil or pure sand, the young plants will soon make their appearance and gain a useful size before November. Another good way is to make up a firm hotbed, put frames and soil on it, and sow and grow as in the spring. In cold districts, where open-air sowing now would not be productive of any good results, this plan should be adopted.

Spring Onions.—Warm dry weather suits these as a rule, but in June this year the weather was too dry for them in many parts; it checked their growth and made many of them behind their usual time in bulbing, but now they are going ahead, and if any of your readers have a fixed day or week for taking up their Onions, I would recommend them not to be particular about that this year, but allow them to remain growing as long as they appear inclined to do so. September or about Potato-lifting time is a good season for harvesting Onions, particularly if the weather is dry, and if it is not they are much easier dried in a shed or outhouse when fully matured than if drawn unripe.

Autumn sown Onions should all be drawn at once, and laid out on an airy sunny place to dry. Many of their stems have died down now, and they may be stored after lying on the surface of the soil for a day or two. Onions of this class are most useful, and they should be extensively and generally grown.

Autumn and winter Radish.—The best of all late autumn and winter Radishes is the China Rose. If sown now and again about the middle of September it will be found most serviceable throughout October and on until March next year. The first sown lot will bulb during September and October, and those which have taken the lead in developing will be ready for use in the latter month, but they need not be all used then, as they will remain good for some months. Those sown in September will not bulb fast, as November weather is not favourable to them as a rule, but they will continue to swell throughout the winter, and no frost or cold weather will prevent them altogether from doing this. Its very hardy character is one of the most valuable habits of the China Rose, and those who deal with it may easily have Radishes throughout the whole of the winter. The more hardy they are grown in the early part of the season the better. Nothing like any kind of protection should be given them until frost or snow comes, and then a layer of straw or something of the kind is all the temporary protection which they require. I have found them to

grow much harder in moderately rich soil than in ground extra rich, and an exposed situation is much better for them than a too sheltered spot. In all cases the seed should be sown in drills 1 foot apart and 2 inches deep, and the soil all round should be made very firm. Thin sowing is best, as when the young plants come up in crowds they prevent each other from swelling, unless many of them are drawn up prematurely and thrown away.

Vegetable seeds, especially Peas, are ripening very fast this season. I have known it to happen in some seasons that from our April sowings we could hardly manage to get our seed in sweet and dry by the end of September, but this year it is ready now and in prime condition. A dry atmosphere favours the ripening of seed, but dryness at the root does it still more, and of late our soil, especially on and near the surface, has been like dust, owing to fierce sun-heat and no rain.

Edible podded Peas.—This is the first season in which I have grown these to any extent, and I am of opinion that they are worthy of more general attention than they receive. A friend of mine not far from here had a batch of five or six varieties of them from a Glasgow firm, but none of them has produced pods longer or wider than one's little finger, and he is not favourably impressed with them. In my case I am thinking about one which I had on trial from Messrs. Jeffries, of Cirencester, and which grows 6 feet high, and the pods of which attain a length of 8 inches and a width of 2 inches. These can be used from the time they are newly formed until the Peas in them have attained a large size—a period of some weeks duration. The pods, too, boil down beautifully, and are tender and well flavoured.

Tomatoes in the open.—Against walls these are now forming many clusters of fruit, and if properly treated will become a profitable crop before the season is over. Thin training of the shoots and leaves, full exposure to sun and air, and substantial feeding at the root when required are the main points requiring attention in order that successful results may be realised. Dry atmosphere suits Tomatoes capitally, but too much damp generates disease.

Margam, South Wales.

J. MUIR.

The Potato crop with us this season is about the best I have seen. The tubers are large and fine, and there is scarcely a sign of disease. Veitch's Ashleaf, Beauty of Hebron, Covent Garden, and Schoolmaster are the varieties which we grow most of, and Beauty of Hebron is the heaviest cropper of the four. The Ashleaf has also done remarkably well this season, its tubers attaining a size seldom seen in the case of this variety. I should be glad if any of your correspondents would give us their experience of Cosmopolitan in this special Potato year. I thought it decidedly the best flavoured Potato in cultivation, but was compelled to discard it on account of its extreme susceptibility to disease.—E. B.

Cucumber roots diseased (W. W.).—Your plants are suffering from a severe attack of the disease which is caused by microscopic worms termed Nematodes. We have placed sections of your roots under the microscope; they swarm with the minute worms in all stages of growth, as well as their eggs. The worms gain access to the plants from the earth in which the Cucumber plants are growing, or from the water supplied. The plan usually adopted for the destruction of this pest is to clear out all the material in which the plants are growing, subject it to fire, and supply new. The attacks of this worm, which closely resembles the so-called vinegar eel in appearance, are sometimes very persistent; in some districts it is quite unknown.—W. G. S.

5225.—Peat moss litter as manure.—My experience of this, although limited, is as follows: A truck-load was procured last winter for trial; it resembled horse manure as shaken out for Mushroom beds. It proved to be one of the

most violent heating materials I have ever met with. We placed it in a heap when received, and on turning it two days afterwards all the centre part was extremely hot and almost white. It was then laid in small ridges and turned on alternate days, when even the middle of these heated sufficiently to whiten the material. This took place for some little time, and then became exhausted. We afterwards used it for top-dressings, when it soon became so far decomposed as to form a sort of vegetable mould. I should not advise "C. M. D." to use it in Melon frames if he could procure straw litter and leaves, which retain heat for a much longer period without being so dangerous. —J. G. K.

THE CHINESE YAM.

(DIOSCOREA BATATAS.)

THIS Yam has never been very popular, but it is certainly sufficiently valuable and productive to be worth notice. It may not be worth extensive cultivation, but the variety which it makes, at a time of year when vegetables are scarce, is a recommendation not to be overlooked. The chief thing wanted is a fairly rich deep soil. This is indispensable, as is also a well-drained position; a light mellow loam suits it best; a stiff cold clay should be avoided. The ground should be prepared early in winter, and if not good to the depth of 2 feet, it must be made so. In many cases, however, this Yam may be successfully cultivated by simply trenching the ground and incorporating with it, at various depths, plenty of rotten farmyard manure. In cases where the soil is somewhat heavy, it will be desirable to use leaf soil or burnt refuse rather freely, so as to lighten the bulk of the staple. All this work should be done in the early part of the winter, in order that the ground may have time for the surface to get mellow, and also to settle down before planting.

The plants are obtained in two ways. The best are those got from the top of the tuber—the crown, of which each tuber furnishes one. The other way consists in cutting the tubers up into 3-inch lengths, when each will form a plant; but such pieces do not produce nearly so large tubers the first year as can be got from crowns. We used to plant this Yam early in April, which did very well for the west of England; but probably that would be too soon north of the Tweed, for, although the plant is not tender, if it is planted too early the young growth gets injured by spring frost. The sets should be put in rows 18 inches apart and 15 inches asunder in the rows. The crowns should be placed just under the surface and covered with fine soil. As this Yam is a trailer, its growth requires some support, or it would get into such a mass of entanglement that it would be weakened. We used stakes about an inch in diameter and 5 feet in length; but feathery Pea sticks would no doubt answer equally well.

As the Chinese Yam is a native of a hot climate, it requires a good supply of moisture at the roots in our driest summers. We found that we had considerably the larger tubers after a hot, dry summer, provided they had plenty of artificial watering; but we had to give up their cultivation after the succession of wet and cold summers which we experienced three or four years ago. It is only fair to remark, however, that there could not be a worse soil than ours, and this, with an elevated position, placed the plant under most unfavourable conditions. In a well-drained soil that is fairly light and of average depth, the result will, I have not a doubt, be satisfactory. If the stakes are put to them as soon as the growths appear above ground, and they receive plenty of water in dry weather, they will not require any other attention all the summer.

The tubers are fit for use about the beginning of November, at which time the whole of them may be taken up and stored, in the same way as Carrots are stored for winter. The getting of the crop out of the ground is about the most difficult part of the matter, for, unless more than an ordinary degree of care is used in securing the tubers, they are so brittle that many will be broken in

pieces. The proper way to get them out is to open a deep trench at one end of the bed, and then with a fork carefully remove the soil from them, so as to expose the whole length of the tubers before any attempt is made to disturb them. It is a rather curious feature of this plant that the tubers increase in thickness as they grow downwards, and in a suitable soil and a favourable summer many of them will grow to 30 inches in length. If from any cause they get broken, all the pieces large enough for the table should be preserved, as the pieces keep quite as well as the whole roots, only they do not look so well when sent to the kitchen. As a matter of fact, the whole ones are always cut into pieces 4 inches or 5 inches long before they are dressed for the table. Before they are taken to the store, about 6 inches of the top of each should be cut off and preserved, to form sets for another year. If the stock of plants is insufficient, some of the smaller tubers should be cut into pieces 4 inches long to form sets; these will form crowns sooner than would be the case if they were freshly cut at planting time. We generally laid our stock of tubers in boxes of dry soil, to keep them from shrivelling during the winter. Any cool, dry place will serve for their winter quarters, if frost cannot reach them.

J. C. G.

WORK DONE IN WEEK ENDING AUG. 20.

AUGUST 14.—The drought continues, but the heat is less intense, and there being an extra strong dew this morning, all hands went mowing round trees and verges where the machine cannot go, for though there was little Grass to cut, there was plenty of "bents," and on the low damp ground by the lakes Rushes which looked very untidy, and still more untidy do the weeds in the lakes look, and we have commenced to get them out. I do not know the name of the weed, but have heard it called the American Pondweed, but whatever its name, it is very troublesome to get rid of; indeed we have long ago given up the attempt at extermination, and are content to cut it annually from about the end of July to the end of August, and it is no more bother to us all the year. Riphooks fixed on long handles are the implements we use. Two men cut, and a third holds and steers the boat; the weeds drift to the sides if there is the slightest wind, and are then quickly raked out. Sub-tropicals grow away finely, and tying up was done to-day. The least effective—perhaps I ought to say the most weedy looking—are the Tobaccos, *Nicotiana wigandioides* and its variegated variety; the sweet night-scented variety grows more bushy and flowers so beautifully, that it should be grown more largely, but the others we have decided to grow no more, nor *Solanum giganteum* either, which for three years in succession has died off most mysteriously. Mulching with rotten manure was done to the large beds when first planted, and whilst the weather continued moderately moist it was left undisturbed, but now that all is so dry, the birds in their search for food scatter it in all directions, and instead of applying more, and to prevent watering, the surface soil is kept open by using a small hoe, pains being taken not to break the foliage, which now covers the beds. We made a last sowing of Turnips to-day on a border that had been cleared of Potatoes, the preparation being a dressing of wood ashes in lieu of manure proper, and forking over weeds and haulm, the small Potatoes being picked out during the operation. Preference is given to sowing in drills a foot apart, and which were watered both before and after the seeds were sown, the seeds being covered in with the hand. Should the weather continue dry, we shall be obliged to net over the plot before the seeds emerge from the ground, else the birds would clear the lot in about one day. Winter Spinach is one of our most important crops, and this we like to sow about the last week in the month; if sown earlier, it quickly runs to seed. Ground that has been cleared of Peas is now being prepared for it by deep digging and a dressing of guano.

AUGUST 15.—This has been a day of watering. Flower beds, herbaceous borders, Broccoli, Celery,

outside Vine and Peach borders have been well done, at least, so far as artificial watering can be called well done, for after all, in comparison with rain, such watering is complete mockery, particularly in such roasting weather. Inside watering is different, as in that case the effects last a much longer time, owing to the drought and sun-influence having but little power. Neither time nor water will hold out for watering Peaches, Apricots, and Pears on walls, and therefore we do the next best thing, which is to well syringe the trees every night, and this keeps the foliage clean and aids the swelling of the fruit. All the trees were well mulched during the winter, and well has that labour been repaid. Tomatoes in the open were planted too late, not till the third week in June, but, thanks to good supplies of water and sunshine, they are now fruiting in perfection, and to-day the fruit has been thinned, two and in some instances three being all that are left together, the entire number of fruit on a plant being decided by the space that each has for growth, some having a yard and others double that space. In such a season as this there is no need of tying aside or of taking off a part of the foliage to expose the fruit; it is rather desirable to leave it intact for partial shade to prevent scorching. A similar rule we are adopting in regard to colouring of Muscat Grapes, the hint to do so being given us by the scorching that a few of the berries underwent on the 8th inst., previous to applying a little shade by syringing whiting over the glass. Usually we tie aside the leaves to let the bunches have full light, but they are colouring perfectly without it this season; and even if they were not, it would be preferable to have them a little less golden than to be disfigured by scorching. Plenty of air, no stopping of laterals for the present, a little fire-heat at night even in this hot weather to admit of air being left on all night, are the conditions that ensure high finish. Of course, should the weather set in dull, then it may be desirable to admit a little more light by the usual drawing aside of the largest leaves. Except Gros Colmar, all the black varieties put on the brightest bloom when partially shaded, but I think that a still greater aid in this direction is to leave as much lateral growth as can be left without overcrowding to the injury or prevention of ripening of the wood.

AUGUST 16 (Saturday).—Saturdays we always set apart as sacred to cleaning up; all walks and roads in the vicinity of the mansion have had attention to-day. During the summer Grass verges need cutting once fortnightly; the roads have had their turn to-day, and the garden—flower garden in particular—shares the like honour next week. The flower beds have been picked over. Fuchsias, Abutilons, Grevilleas, and some few other tall plants have been tied to stakes. *Pyrethrum Golden Feather* and *Mesembryanthemum cordifolium variegatum* needed most labour in the way of pinching, but the improved appearance has justified all our work. As showing the tropical character of the summer, basketfuls of pinchings from *Alternanthera* have been taken off to-day to keep the arrangements or patterns true to design. The most vigorous growing kinds are the oldest varieties—*paronychioides*, *amabilis*, *latifolia*, and *magnifica*. *Spectabilis* is the most brilliant and as vigorous as any this year, but it is the first to succumb as soon as the nights get a bit cold, and we use it but very sparingly. As with flower garden, so it is with the houses, cleaning up is the order of the day. Brooms we never spare, and as a matter of course cobwebs either. We do not even care to see such network at a distance, particularly in vine-ries, for the common spider has much to answer for in the disfiguring of Grapes; hence we consider our weekly dislodging of such pests is labour well spent, even if neatness counts as nothing, which is not the case. Such cleaning up and well watering of everything, to as much as possible prevent Sunday labour, renders it undesirable to have any extraneous work on hand or arranged for Saturday, at least not more than can be completed additional to the perfect order and cleanliness that ought to characterise Saturday night and Sunday

This rule I hold as inviolate, that is, of not apportioning any heavy or extra work for Saturday, and it is astonishing how naturally, I was going to say imperceptibly, all in the garden fall into the same way of thinking, and work accordingly.

AUGUST 18.—Yesterday was one of the most parching days there has yet been, as in addition to scorching sunshine there was a strong southeasterly breeze; consequently watering is in full swing, and one values the blessing of having a good supply of this commodity; but for all that we do so long for rain, but of which there seems no immediate prospect, and so we determined to have another day of hoeing in the kitchen garden. The old Cabbage plot came in for an extra good doing up, all the old leaves being pulled off, and also the large leaves that were still green, but which hindered the development of the small sprouts that will presently be invaluable. The ground between the rows was hoed very deeply, and the next best thing would be a good soaking rain, which would make the produce equal to the best young Coleworts. This latter crop, I suppose owing to the heat, is quite a failure with us this season, and as soon as the conditions are favourable we shall replace them with curled Kale or Cottager's Kale; the last is the most useful and hardiest winter green there is, not even excepting Brussels Sprouts. A sowing of Black-seeded Bath Cos Lettuce was made to-day on a south border, and another sowing about a fortnight hence will be ample to give us a supply from December onwards. Endive is but little appreciated, and our first and only sowing was made to-day. Indoors, or connected with the houses, the principal work has been tying up of Chrysanthemums, but not with a forest of stakes, only a sufficiency being used to keep the branches upright and from being mutilated by wind. Strawberry potting has been finished, and the first potted batches weeded and the runners pinched off; they grow so freely that this is required about twice a week. They are always watered with a spouted pot; promiscuous watering with a rosed pot that serves all alike is much to be deprecated. These and Chrysanthemums, too, are well syringed every evening, and if vigour may be taken as an indication of health, such washings ought to have much of the credit. Peaches in the late house are ripening so rapidly, that shading, with a view of retarding, has been had recourse to; this shading cannot affect their colouring, as they are already well coloured; it may affect flavour somewhat, though not to any appreciable extent. We like to gather Peaches, Nectarines, and Apricots a day or two prior to their being what is called dead ripe; they then keep for a longer time, and are of a more refreshing flavour and less mealy in substance. Wasps have come in shoals, and all our netting has been requisitioned to prevent their depredations. We last year tried the lately recommended remedy for the destruction of their nests, viz, cyanide of potassium, and it answered so well that we shall adopt the same measure again.

AUGUST 19.—Should this dry weather continue we shall soon be reduced to one job, viz, that of watering, but notwithstanding we cannot rest and be thankful, and therefore must—indeed have given greater attention to picking off bad flowers and seed stems from herbaceous plants. Phloxes, Pentstemons, Antirrhinums, and Potentillas, and others that flower for long periods get the largest share of labour. Sweet Peas, like the edible ones, have done but indifferently; they have been soaked and the seed-pods picked off, and we hope to get them to flower better presently. Other work of this description to-day has been the removal of seed vessels from Violas, which are now giving out in spite of all our watering and mulching; they will not stand such continuous sunshine. Pelargoniums revel in it, and have never been more magnificent, either as to flower or foliage. Single Dahlias stand fairly well, but their inordinate seeding propensities are a great nuisance. Twice a week at least they have to be picked over to keep them in anything like respectable form as to neatness and flowering. They have been picked over and tied

up to-day. A row of them in mixed colours has been allowed to grow together, and being trained in flat or fan-form, with an evergreen hedge as a background, the effect is beautiful in the extreme. The surplus wood in the early and second early Peach houses is being thinned out with a view of letting daylight and sunshine play on the wood and buds for next year's fruiting. The trees are now virtually out-of-doors, the lights having been taken off, but which will be replaced as soon as we get very cold nights. A sowing of Cucumbers for winter was made to-day, for though the old plants might keep on fruiting, the odds are much against them, whilst young August-sown plants rarely fail to bear freely the winter through. The last lot of Melons have just been planted, and will need all the coaxing possible to get good fruit from such late planting, but we have done it previously, and this gives us courage to try again.

AUGUST 2.—Sweeping up of coach roads and trimming up of woodland and outside walks have taken all our out-of-doors labourers to-day, and for once we have not begrudged such labour, as in the garden there is little to be done till our craving for rain has been satisfied. There will be no excuse for weedy gardens this autumn; the hoes have, or ought to have, settled that matter long ago. A border having a southern aspect has been prepared for the reception of Pelargonium cuttings, which will be put in as soon as possible now, as also will offsets of Echeverias and other succulents, which strike under exactly similar conditions. For soft-wooded plants of the tender section, a frame is being made up of stable litter and leaves, and a week hence the cuttings will be put in.

HANTS.

GARDEN DESTROYERS.

RED SPIDER.

THOSE who have been engaged in the cultivation of plants, even on a limited scale, will not need to be told how injurious this little insect is to plants of all descriptions that it happens to attack. Small and insignificant in appearance as it is, its presence is marked by worse consequences than those of other pests that look much more formidable. The leaves of a deciduous plant that is subject to its ravages quickly cease to perform their functions, and prematurely die off; whilst the stouter, more enduring foliage of Evergreens is injured to an extent that does even more mischief to the plants. Vines that are but slightly affected invariably fail to colour their fruit fully, and if its ravages are not soon stopped, the weakening influence extends to the following year's crop. On Peaches its weakening effects, whenever allowed to get a head, are equally apparent. The dry condition attending the ripening of Melons particularly suits it, the flavour of the fruit always suffering in proportion to the extent of its presence. Azaleas that have their leaves injured by it are not alone perceptibly reduced in strength, but the flowers produced afterwards for one or two years are wanting in their natural depth of colour. Roses cultivated under glass, either when planted out or grown in pots, are always more liable to its attacks than most plants. Fuchsias are favourite food for it, especially in the summer months. In fact, although there are some plants which suit the taste of this diminutive pest better than others, and on which it rarely happens that a season elapses without its putting in an appearance, yet it is by no means particular as to its food, for it will live upon many things the juices of which might be supposed to be of so acrid a nature as to place them beyond its molestation. Plants in a free vigorous state of growth are never so liable to its attacks as when in the opposite condition. Wherever anything approaching a stagnant state of the roots exists, either through disease, insufficient nutriment, over confinement of the roots, or want of water in the soil, with a dry condition of the atmosphere, there red spider meets with conditions just to suit it; moisture is its greatest enemy. In the cultivation of plants, especially such as are of a fruit-bearing character,

that during the ripening process need the atmosphere being dry, it previously present to ever so limited an extent, it then spreads as if by magic. The same thing happens with the numerous plants grown for decorative use that require the atmosphere around them being kept drier towards the end of summer at the season when it becomes necessary to thus assist the ripening of the wood.

THE VARIOUS REMEDIES in use for its destruction, such as the fumes from sulphur applied to the heated pipes or flues, the application of powdered sulphur to the affected plants when such is admissible, washing with clean water, or with some or other of the various mixtures which will destroy it—these are so well known as not to require further mention here; but what I want to urge upon amateurs and others whose experience may happen to be limited is, that prevention is better than cure, and it is much better to take means in the early part of the season—that is, in spring and the beginning of summer—to so treat their plants as not to admit of this insect getting a lodgment during the commencement of the season. For as certain as it once obtains a footing, even if not present to an extent to be noticed, as soon as the hot, dry weather comes on or the time in autumn for keeping a drier atmosphere arrives, then will the ravages of this insect become such as to give much trouble. One of the principal causes through which red spider gets a footing early in the season is an insufficient use of the syringe. Plants grown under glass should, with very few exceptions, be regularly syringed overhead, care being taken to get the water to the under side of the leaves as well as the top; no mere sprinklings are effectual. With such plants as this insect will live on a regular good drenching ought to be given once or twice every week through the growing season. It should ever be remembered that plants in the open air are very differently placed, so far as being under the influence of the vapour moisture which is ever rising from the ground and coming directly in contact with the underside of the leaves, where principally the insects secrete themselves, from what they are when grown under glass standing on dry wooden stages, either when made close without interstices, or composed of bars with openings between, that in either case are made still drier, if, as often happens, they are placed over the hot-water pipes. Under such conditions, instead of the moisture that in the open air rises amongst the plants to an extent that in the night-time covers the underside of the leaves with dew, they are subjected to the much drier conditions which are so favourable to the development of red spider. In place of these dry stages, which are costly and perishable, I should recommend a surface composed of fine coal ashes or something of a like nature which will hold moisture that will at once place the plants under conditions more natural to them and equally opposed to such as the spider delights in. It would be a decided gain even on the score of economy, as the wooden stages so much used in greenhouses and conservatories cost a deal and are always requiring repairs.

OUT-OF-DOORS an insufficiency of moisture arising amongst the leaves is often the cause of red spider gaining a footing on plants to an extent that all but defies its extermination, is just in the way mentioned by Mr. Douglas in the case of his laced Polyanthus. At one time I had a good collection of these pretty flowers. I grew them continuously in pots plunged during summer in ashes in a shady place, and in dry weather I kept the ashes so moist that the soil in the pots absorbed enough water for the plants, it rarely being necessary to apply any directly to them. Until I adopted this practice I was always troubled with this insect. Anyone who has ever grown these Polyanthus need not be told how very differently they thrive and increase when free from this pest from what they do when it puts in its appearance, even to a limited extent. The practice advised by an old Manchester florist, Mr. Slater, mentioned by Mr. Brockbank, of giving a copious watering overhead late in the evening effected the same purpose, but if I had applied as much directly to the roots as I gave to

the plunging material between the pots, there would have been some danger of the roots rotting, fond of moisture as these Polyanthes are. Four-fifths of the cases wherein this most destructive insect attacks cultivated plants arise from the plants being placed under conditions of insufficient moisture overhead, and which in a state of nature are present, to compensate for the absence of which, if success is to be attained, the cultivator must take means to make them good.

T. BAINES.

INJURIOUS INSECT COMPETITION.

A FEW days ago in connection with a flower show at Frome the first injurious insect competition ever held took place. Miss E. A. Ormerod offered prizes of £3, £2, and £1 for the best collection of specimens of food plants injured by insects, accompanied by samples of the insects injuring them, and by a short account of the attack, and of the methods of prevention adopted. Only one exhibit was brought forward, and this was judged by Mr. Henry F. Moore, who awarded it the first prize. It was sent by Mr. Herbert Haley, of Feltham Cottage, Frome, and was very instructive. The specimens included Plum and Red Currant leaves attacked by caterpillars, Potatoes and Spinach by wireworms, Turnips by Turnip fly, Celery by grub, Strawberry by chrysalis of caterpillar, Potato by Colorado beetle, branches of Gooseberry tree stripped by saw-fly, Cabbage leaves by butterfly, Onion by maggot, Filbert tree by various insects, Stephanotis by mealy bug, centipede, daddy-long-legs, earwigs, &c. Each insect was shown in a separate bottle, and there was a short written account of the insect attack and of the methods of prevention adopted. The specimens were also accompanied by coloured drawings of the insects, life-sized or greatly magnified. After the show the collection was forwarded to Miss Ormerod, who has written a report upon it, in which pleasure is expressed that it was so "serviceably formed and displayed for practical use." She says also: "The object with which competition was invited was to show the common kinds of crop injury by specimens, so that all, whether previously acquainted with the subject or not, might see exactly how the attack effected, as the case might be, the root or leaf, seed, or flower, together with the insects, or, if necessary, magnified drawings of them. This plan has been worked out by the exhibitor in a way which meets the requirements for useful exhibition very satisfactorily, both as to giving sound information to spectators, and at such small expense that the plan might be easily carried out, either for the temporary purposes needed at horticultural shows, or for successive exhibitions in course of regular instruction at parish schools. The specimens were displayed on white cardboard about 12 inches by 7 inches, the leaves or shoots, or (generally) the injured portions of the plants occupying the upper half or three-quarters of the cardboard, and the attacking maggot, or whatever it might be, being placed below in a small phial, or on cork, as requisite. The name (according to the stipulation of the donor of the prizes) was clearly written below in English. A very short account of the method of injury, and such means of prevention as the exhibitor was acquainted with, accompanied each exhibit. The plan of fixing the card with specimens and the short note of explanation respectively within the lid, and in the bottom of a common white cardboard box, gave a neat and uniform appearance to the exhibits, and likewise gave means of safe carriage, without difficulty or expense. The plan having been especially submitted to me for approbation as to the serviceableness of its details, I have no hesitation in saying that I consider it excellent, for it conveys all that is requisite in the way of information as to the nature of attack, without hampering the inquirer with more labour than just looking at the specimens. Both for the above reason, and also that by fitting a card of one kind of attack after another, according to season or other reason, into the exhibition box, the scholars at country schools might thus get instructed.

ORCHIDS.

DISA GRANDIFLORA.

EVERY day's added light shows us that this fine old Orchid is as variable as it is beautiful. Nor is this much to be wondered at, albeit that its only habitat is by the sides of watercourses on Table Mountain, since it is, no doubt, perpetuated there by seeds. Then, unless memory is a fond deceiver, seedlings of Disa have been raised in our gardens at home. I fancy Mr. Leach raised seedlings; at any rate imported roots from the Cape vary much in their depth and richness of colouring, in vigour of growth, and in size and number of flowers on a scape. At Chatsworth a single stem of Disa bore twelve flowers; at Glasnevin it bore nine flowers; while five to seven flowers on a stem are by no means uncommon now-a-days in gardens where the plant is well grown. When the late Mr. Andrews gave us that marvellous plate with eight flowers in "Warner's Select Orchids," some of us thought such an inflorescence impossible, but, as we have already shown, in two gardens at least that number has been exceeded. I must say, however, that these many-flowered spikes are very disappointing after the first two or three flowers are open, and I would much prefer a strong spike bearing from two to four flowers only, and those of good size and bright colouring. There are at least four well marked varieties of Disa grandiflora in cultivation, viz., the type, D. grandiflora superba, D. grandiflora Barrelli, and D. grandiflora violascens. The last mentioned is, I think, the most beautiful, having purplish flower-stems, and the flowers are suffused with a violet hue, reminding one of the colour in some varieties of Masdevallia Harryana. A correspondent at the Cape once wrote and told me that he had seen both white and rose-coloured varieties of D. grandiflora, and when I was at Kew I remember copying some of Mr. Sanderson's drawings lent to the herbarium for that purpose, and amongst these was a drawing of Disa macrantha with rose-coloured flowers. This can, no doubt, be seen at Kew, the copy, if not the original, and if not a form of D. grandiflora, it is a very nearly allied species, and one not as yet introduced.

THE DISA MACRANTHA of THE GARDEN (see Vol. XVII., p. 494), which flowered at Cirencester with Mr. Elwes, and at Glasnevin with Mr. Moore, is really D. megaceras, but the true D. macrantha as figured in Sanderson's sketches deserves looking up, since, even if only a form of D. grandiflora, it is a very distinct and desirable one. I see you allude to a Disa grandiflora with "green tips" to its sepals. This is merely an accident of growth; in well grown flowers the sepals are self-coloured to the very points. As grown at Straffan, at Purdysburn, near Belfast, or at Glasnevin, no Orchid could well be more beautiful than this one, and certainly no Orchid can be grown with less trouble. The essentials to successful culture are good drainage, good fibrous peat, and copious bedewings overhead when growing with a syringe two or three times a day. During winter a moist corner in a greenhouse from which frost is excluded suits the plant, and during spring and summer it will luxuriate in a cool, airy pit or frame. The pots or pans should stand on a cool moist bottom of ashes, gravel, or spar, and a little shade is necessary during bright sunshine. The late Dr. Harvey told us that this plant grows at the Cape by the sides of the streams, its foliage being overshadowed by Restios, &c., through which its flower-stems peep out in the full sunshine. This contains a hint to those who would grow the Disa out-of-doors, and is suggestive of its being most likely to succeed if planted by a brookside in peat, so that shelter from full sun and scathing winds would be secured. Everyone must have observed how the flower-stems of this plant lean towards the south or south-east, showing that light is a *sine qua non* to them, even although the foliage itself may not luxuriate in full sunshine when under a glass roof. I have to-day seen the magnificent plants at Straffan, and although the best and earliest spikes

have been cut there, ample material remains from which to judge of their vigorous growth and extraordinary beauty. They were finer even this year than when flowers from them were figured in THE GARDEN some time ago.—F. W. B.

— I was glad to find I had the better variety of Disa, but I did not by any means send you my best spike. I have one with five flowers, beautiful, but I did not care to cut it. I have Mr. Leach's treatment in his own handwriting, but we manage Disas more easily, I think, than he did. He was one of the first who grew this Disa successfully.—A. RAWSON, Windermere.

Dendrobium Dearei.—The plant from which the spike was taken, of which a notice appeared in THE GARDEN last week, has been grown with the Phalænopsids in a temperature varying from 70° to 80°. I find it succeeds best grown in a basket in a mixture consisting of one-third fibry peat and the rest Sphagnum, sand, and charcoal. It is now making fine growth and blooming freely from all previous made growths, both old and new. One good quality belonging to this plant is that it lasts more than three months in bloom.—F. HILL, Hillingdon.

Cattleya Gaskelliana var.—Further evidence of the beauty and value of this new Cattleya comes to us from Mr. G. Law Schofield's garden at New Hall Hey, near Manchester. It is certainly very lovely and distinct from others we have seen. It has pale mauve sepals and a very delicately toned lip, with lemon-yellow throat and broadly blotched with the deepest amethyst, which extends by streaks and pencillings into the throat. The perfume, too, is pleasing and sweet. Mr. Wise, the gardener, states that he has had a plant carrying no fewer than thirty-four blooms, which must have been a beautiful specimen.

A huge Vanda Sanderiana.—A wonderful specimen of this new Orchid is now flowering in Messrs. Backhouse's nursery, at York. The plant has eight leads, and has produced thirteen flower-spikes carrying no less than eighty flowers. These measure from 4 inches to 4½ inches across. The sepals are pale straw coloured, richly and beautifully netted with reddish crimson and edged with white. The petals are soft blush, freely spotted in the lower half with purplish crimson; the lip is claret coloured. The whole is stout and vigorous, and in shape like that of the finest forms of Odontoglossum vexillarium. The spikes are from 9 inches to 12 inches high. The plant is dwarf and compact; it will probably remain in fine condition for a fortnight or three weeks. Such an Orchid as this is alone worth a long journey to see.

Zygopetalum rostratum.—It is very seldom that this rare Orchid is seen in flower, even in the richest collections. Mr. Bonny, who possesses several good plants of it, has it finely in flower in his collection, at 88, Downs Park Road, Hackney. It is not only a rare, but a beautiful Orchid, and one of the showiest in the genus. The flowers are between 2 in. and 3 in. across, with dark sepals and with a flat heart-shaped labellum 1½ in. across, pure white, and as firm in texture as if chiselled out of marble. There are a few streaks of pink on the centre of the lip which add to the beauty of the flower. The flowers last in perfection for several weeks in a cool atmosphere, and as they are produced at the present season, the plant has a peculiar interest to Orchid fanciers. It is singular that this Orchid should be so scarce, seeing that its native habitat is well known, and that it is not a difficult plant to manage if grown in a moist intermediate house.

Acineta Humboldti.—We noted this last June as being in flower in Mr. Peacock's collection at Sudbury House, Hammersmith, and gave a woodcut of it in THE GARDEN (p. 482). There is now in flower at Kew a plant of the variety figured in the Botanical Magazine as A. Humboldti var. fulva, which is distinguished from the type by having flowers with a dusky yellow instead of a

deep red ground. Coming, as it does, from the same country as *Cattleya Dowiana*, this beautiful and sweetly scented Orchid requires somewhat similar treatment, but, unlike the *Cattleya*, it is not subject to spot and decay of the young growths—the great drawbacks which one experiences, as a rule, in the management of both *C. Dowiana* and *aurea*. At Kew the *Acineta* is grown in an intermediate house, and is planted in a pot in peat and Sphagnum and suspended near the glass in a little shade. *A. Humboldtii* and its variety rank among the most striking of orchidaceous plants, and few are more worthy of cultivation.

Masdevallia trigloch.—In variety of form and in brilliancy and delicacy of colour the genus *Masdevallia* affords an exceptionally rich supply of attractive material with which to form a monograph, and in good hands a work of unusual interest might be made for the thousands interested in Orchids, and especially in *Masdevallias*. This idea was suggested by seeing several diminutive but pretty little species in flower at Kew a few days ago, species which are almost unknown in Orchid collections generally, and amongst them was that rare little gem named *M. trigloch*. It belongs to the *Triaristella* group; its leaves are short and very thick tufted, and from their midst rises the hair-like peduncle about 3 inches in length, bearing a dark red or port wine coloured flower, triangular in shape, and three quarters of an inch long. The lower portion of the flower has a depression or chin a little above its middle, and on each side at the base is a short yellow tail, a third tail being on the top of the upper part of the flower. The petals, labellum, &c., are exceedingly small, and are almost hidden away inside parts more developed.

SOCIETIES.

ROYAL HORTICULTURAL SOCIETY.

A MEETING of the floral committee of this society was held at Chiswick recently, at which the following subjects were examined:—

CALADIUMS.—Three marks were given to *argyrites*, *candidum*, *Alfred Bleu*, *pictum*, *Mdme. Marjolin Schaeffer*, *Olio*, *Mdme. Alfred Bleu*, *M. A. Hardy*, *Dr. Lindley*, *Ceres*, *Mithridate*, *Ludemannii*, *Rameau*, *Laingi*, *Prince of Wales*, *Ville de Mulhouse*, *Comtesse de Condeixa*, *minus erubescens*, *Gerard Dow*, and *Paul Veronese*; two marks to *Mdme. de la Devansaye*, *Princess Alexandra*, *Mdme. Heine*, *Chantini*, *Max Kolby*, and *John R. Box*.

ADIANTUMS.—Three marks were given to *cuneatum*, *Pacoti*, *Lathomi*, *gracillimum*, *decorum*, *Victoria*, *concinnum*, *scutum*, *Sanctæ-Catharinæ*, *trapeziforme*, *macrophyllum*, *pedatum*, *formosum*, *pubescens*, *hispidulum*, *Veitchii*, *amabile*, *rubellum*, *Capillus-Veneris*, *cardioclænæ*, *speciosum*, *concinnum lætum*, *rhodophyllum*, *caudatum*, *farleyense*, *pendactylon*, *assimile*; and two marks to *Ludemannianum*.

FOLIAGE BEGONIAS.—Three marks were given to *Rex*, *Duc de Brabant*, *Marshallii*, *Juliette Paulin*, *Senèque*, *Emilie Chaté*, *Mdme. Trigneaux*, *Xanthina var. argentea*, *Helène Usher*, *Louise Chretien*, *Bettina Rothschild*, *discolor*, *Rex Apotheose*, *Zenobia*, *Julie Serot*, *leptophylla*, *Comte A. de Leon*, *Marga*, *Sylvia*, and *Mdme. d'Halloy*.

PENTSTEMONS.—Three marks were given to *Purple Queen*, *Cerise Queen*, *virginale*, *Edison*, and *Marjolaine*.

First-class certificates were awarded for *Carnation Anna Benary* (Ernest Benary) as a border flower; *Sweet Pea Princess of Wales* (H. Eckford).

At a meeting held at Chiswick on August 19 the fruit committee examined the collections of Potatoes and Tomatoes growing in the gardens, when the following first-class certificates were awarded, viz.: *Potato Ellingtonia*, from Mr. Ellington, West Road Garden, Wildenhall, Suffolk; *Potato Nott's Victor*, from Mr. R. Nott, Vermont, U.S.A.; *Potato The Doctor*, from Mr. G. Pritchard, Green Street, Sittingbourne; *Potato Charter Oak*, from Messrs. Bliss & Sons, New York; *Tomato Sutton's Reading*

Perfection; *Tomato Hackwood Park Prolific*; *Tomato Yellow*, from Mr. B. S. Williams; *Tomato Lord Wolseley*, from Mr. B. S. Williams.

NOTES OF THE WEEK.

Pontederia crassipes.—The usual character of this plant is a rosette of kidney-shaped leaves on petioles, which are much inflated in the middle, so that they look like fishing floats, whilst in length they do not generally exceed 6 inches. In the *Victoria* house at Kew there is a quantity of this plant, but instead of the float-like character of the petioles as above described, they are prolonged like those of a *Sagittaria*, some of them measuring a little over 2 feet in length. No doubt the high temperature of the water (85°) has brought about this alteration in the shape of the petiole, and yet there is nothing in the appearance of the plants themselves to suggest that the treatment is not suitable for them.

New park at Newcastle.—The new park publicly opened at Newcastle on Wednesday last was the gift of Sir William Armstrong, and is named the Armstrong Park. Newcastle is now in possession of over 100 acres of park and recreation grounds. In 1878, the corporation, alive to the importance of open spaces, purchased parks at the east and west ends of the town as near the houses of the people as possible. The Heaton Park, consisting of twenty-three acres, had scarcely been opened when Sir William Armstrong indorsed the policy of the council by generously extending the area to forty-two acres. Sir William has recently added to his munificence by his gift to the city of the pleasure grounds of Jesmond Dene, containing some sixty-two acres. They are charmingly wooded, while the general formation of the ground presented every feature that could possibly be desired by the most critical authority on landscape work. The banqueting hall and its surroundings are included in the gift, together with valuable residential property, the annual income arising from which will be appropriated to the maintenance of the park. The taste displayed in laying out these grounds is said to be equalled only by the noble generosity of their donor.

The Sacred Bean (*Nelumbium speciosum*).—We recently saw a collection of beautifully executed paintings by Japanese artists of the most popular of the plants grown in Japan, and amongst them were pictures of a number of forms of the Sacred Bean. The skill of the Japanese in the cultivation and improvement of the plants of their own country is well known, some of our most beautiful garden plants having originated with them. The *Nelumbium* amongst others seems to have been worked upon with great success, judging from the coloured representations of the different varieties obtained from the typical rose-coloured form of this handsome aquatic. In colour there was almost every stage between pure white and deep red, cream colour, pale rose, rose, red, and a shade almost crimson in intensity being represented in different forms. Equal variation was observable also in the size and form of the flowers, some of them being composed of a single row of large incurved petals, others of two rows, and others of several rows of smaller petals, which again were closely incurved, or spreading almost horizontally. We were surprised to see so many distinctions both in colour and form of flower, and wished we could procure some of them for our tropical aquaria in this country, where at present we possess only the rose-flowered form. There is so much commercial intercourse with Japan, that it should not be difficult to obtain rhizomes of these varieties of *Nelumbium*. It may be, however, that the desire evinced by the Japanese to keep for themselves the "good things" of their country will be an obstacle to the introduction of these plants into English gardens; and yet, judging by what was accomplished by Mr. Maries only recently, we may hope that someone will succeed in obtaining for us these *Nelumbiums*. It may be well to hint that the characters desired in these *Nelumbiums* are not likely to be reproduced from

seeds, which we believe are always to be had in plenty in Japan. The only certain way to their possession is by obtaining rhizomes.

QUESTIONS.

5233.—**Flowerless Dendrobies.**—What should be done with a *Dendrobium nobile* when it does not flower, but throws out small pseudo-bulbs at the ends of the old ones?—G. J. B.

5234.—**Woodlice.**—I shall be glad if any of the readers of THE GARDEN will give some general directions for the destruction of woodlice. My Orchid house is infested with them; they eat the young tender roots as fast as they grow.—J. M.

5235.—**Ornamenting Anemone beds.**—I should be pleased if any of your readers could suggest anything that could be sown or planted on a permanent Anemone bed, so as to be in flower when the Anemones have died down and are at rest, but whatever is recommended must not interfere with the well-being of the Anemones.—A. F., Warwick.

5236.—**Grape cracking.**—What is the cause and prevention of Madresfield Court Grapes cracking just before they ripen? The berries are fine and foliage healthy. Other Vines, such as Mrs. Pearson, Grizzly Frontignan, in the same house do well, but the Madresfield Court do badly and three parts of them burst. The Vines are about three or four years old.—G. J. B.

5237.—**Kidney Potatoes.**—A prize was offered the other day at our district show for three dishes of kidney Potatoes—three distinct kinds. The second prize collection consisted of what were called Myatt's Ashleaf, Rivers' Ashleaf, and Paterson's Victoria, all so much alike as to be undistinguishable. Is Paterson's Victoria considered to be a kidney? Perhaps some of your readers will kindly say.—OBSERVER, Eristol.

LATE NOTES.

Monstrous Eucharis (T. ?).—An unusual occurrence; probably due to over-luxuriance.

Carnations (T. H.).—Every bloom was so withered up when received, that we were quite unable to judge of their merits.

Hypolepis Millefolium.—This beautiful hardy Fern is most graceful and valuable. We were pleased to notice it growing in the open in Dr. Low's garden at Wimbledon, and quite freely.

Rose insects (A. K. B.).—Without seeing the caterpillars to which you allude I cannot name them. They are very likely the caterpillars of moths belonging to the family Tortricidae.—G. S. S.

The caterpillars forwarded to me feeding on Rose bushes were too young for me to name with certainty, but I believe they are those of the common buff-tip moth (*Pyrausta nucephala*). Shake the bushes well and the caterpillars will fall and may be easily crushed.—G. S. S.

Rose Helen Paul.—This new Rose promises to take high rank as a medium-sized exhibition flower. It is white with just a tinge of pink as the flowers begin to fade. It is excellent in form, and may probably develop into a vigorous grower. It seems likely to be useful to those who want early flowers to exhibit.—J. C. C.

Cucumber leaves (J. S. Bristol).—There is nothing wrong with the Cucumber leaves sent. The slight clouding of a paler colour than the rest of leaf is often caused by a too rapid growth. As you say the fruits (or Cucumbers) are "doing well," there is but little need for apprehension.—W. G. S.

Oiling plants.—At the exhibition of the Royal Caledonian Horticultural Society held on the 9th and 10th ult. the dinner-table plants which were awarded the first prize were in the case of *Crotons* and *Dracenas* oiled to such an extent to give them a polish that it quite dropped from their leaves. Would it not therefore be advisable to frame rules prohibiting the practice of bemarring plants with oil at our shows? and should not judges be instructed to disqualify such plants?—J. R. D. P.

Names of plants.—J. G. K.—I cannot name send a flower; 2, appears to be the leaf of *Batatas paniculata*; 3, *Cymbidium aloefolium*; 4, *Brassia caudata*; 5, *Vanda tricolor*; 6, *Rhododendron Princess Alexandra*.—*Dorking*.—The parasitic plant you send is the Lesser Dodder (*Cuscuta Epithymum*), a common native plant.—J. B. Watson.—2, *Spiraea Douglasii*; 3, *Franea ramosa*; 4, *Spiraea callosa alba*.—Mrs. Neveton—*Salpiglossis variabilis*.—A. P.—*Odontoglossum tripudians*.—J. W. R.—1, *Acacia Iopantha*; 2, apparently *A. longifolia*.—F. F.—*Ceanothus Gloire de Versailles*.—C. D.—*Saponaria officinalis fl.-pl.*

BOOK RECEIVED.

"Diseases of Field and Garden Crops," by Worthington G. Smith. Macmillan & Co.

CATALOGUES RECEIVED.

B. S. Williams' (Upper Holloway) General Plant Catalogue. J. Van der Swaenman's (Ghent) Bouthouse Plants. W. Paul & Son's (Waltham Cross) Bulb Catalogue. R. Veitch's (Exeter) Lutch Bulbs. J. Dicksons & Sons' (Edinburgh) Dutch Flower Roots. Sutton & Son's (Reading) Bulb Catalogue. Mahood & Son's (Putney) Bulb Catalogue.

No. 667. SATURDAY, Aug. 30 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

THE RIPENING OF DAFFODIL BULBS.

WE are requested (page 149) to record our experience on the subject of taking up and replanting Narcissi. I write as an old hand at gardening who has recently commenced making experiments to confirm or refute two articles of popular belief about Daffodils—the one that some single Daffodils may become double in some soils, about which I will say nothing more now; the other that Daffodil bulbs are no worse, but may be better for being taken up and kept some time out of the ground. With regard to the latter belief, I was until lately entirely of the opinion expressed by "F. W. B." that Daffodils should only be taken out of the ground when it becomes necessary from their increase to divide them, and that then they ought to be replanted as soon as possible. My practice has been to order Daffodils from dealers as soon as or even before the new bulb catalogues are published, and to request as a favour that they may be sent before the end of July. If not planted before October, I generally have expected that the flowers would not be so fine as if planted earlier; and I have freely expressed this opinion during several years in notes sent to the gardening journals. During last spring, an eminent dealer in Daffodils, who thoroughly understands their cultivation, assured me that if Daffodils are lifted just before the leaves are entirely dead and exposed to the air under cover and thoroughly dried, the flowers are found to be finer next year than of those not so treated; also that they may when ripe and dry be kept at least two months out of the ground without any deterioration being caused to the next year's flowering. I am quite ready to believe my informant, but as in most things, so especially in gardening, practice is better than theory, so I am making experiments in this matter, and suggest that others should do the same. Meanwhile, I write a few remarks bearing on the practice and the theory of ripening bulbs artificially. To say that in their natural state bulbs are not lifted, therefore the practice must be wrong, is a most fallacious argument. Nature improves by very slow degrees of selection and development, but the art of cultivation quickens the process and produces what may be called, for gardening purposes, rapid improvement; this is illustrated in the case of florist's flowers. The gardener aims at two things amongst others—the development of ornamental qualities in plants and adaptation to climate. Take Tulips as an example. The Tulip belongs to a climate in which the summer is drier, the winter shorter, and the spring earlier than in England. It is found that if left in the ground Tulips have a tendency to try to flower before the atmospheric conditions here are suitable; so it is found best to retard the flowering period by keeping them out of the ground from June to November, and I believe Tulip growers will all agree that the flowers are by this made finer. Then consider Cape bulbs. These in their own country have a short term of growth and a long term of rest, during which rest

the ground is as dry as dust. Hardly any soils in England can satisfy these conditions; therefore there are few gardens in which Cape bulbs can be grown successfully without lifting and keeping dry above ground. As for Daffodils, it is true that they are either native or inhabitants of a climate not differing much from our own as regards conditions of wet and dry, and no doubt Daffodils like a moist and temperate climate during the time of their activity, but I suspect that Daffodils like and are better for a period—say two months—of complete rest, and that in soils in which natural conditions do not afford this it may be an advantage to secure it for them artificially. In Ireland, Wales, and the south-west of England, where the Narcissus tribe do best, they flower very early owing to the mild winters, and the leaves have reached their full development and maturity before the sun has most power, which is from the middle of June to the middle of August. This is their natural time for rest, and during these months I doubt whether it signifies whether the bulb is above ground or under. But in climates such as Cheshire, where the spring is late and the soil permanently wet, the green leaf of Daffodils, though full grown in June, often lasts into August. The poor bulb in this case gets no rest, flower-buds are not developed, and the old and new growth overlaps. In such conditions it seems fair, I think, to suppose that artificial ripening may be useful, and the question is whether in many cases the ripening may not be hastened and the period of rest prolonged with advantage to the bulb.

The above remarks are theoretical. I now come to practice. I find that by lifting and transplanting bulbs before the growth is matured they start into growth again sooner than if left undisturbed, and the development of young green leaves in autumn and the flowering in spring is accelerated. The earlier in the growth the lifting takes place, provided it is after flowering, the more marked is the result; but the germ, as it were, of next year's flower is always formed before the ripening of the bulb. No amount of good cultivation can make a Daffodil flower unless the germ is so formed, though bad cultivation may prevent the flowering. The determination to flower next year is formed soon after the flowering of this year; if Daffodils are dug up and dried whilst in flower, they seldom, if ever, flower the year following. So also if Daffodils are transplanted and disturbed any time between the commencement of growth in summer and their flowering time in spring, the flowering is retarded and more or less injured. I conclude from these observations that lifting bulbs somewhat prematurely is far less injurious, if injurious at all, than lifting them when activity has recommenced. No doubt the million dig up their Daffodils at the wrong time. When summer is wet growth begins during August at the latest, but whether in the case of well ripened bulbs the commencement of activity may not be retarded with advantage to the flowering, I am not yet certain. With a view to ascertain this, I have this summer dug up and ripened in the sun several hundred Daffodils and carefully labelled them, noting the conditions and dates. Some were exposed to the full blaze of this summer's sun under a south wall during all July and August, and these now look clean and healthy enough for Mr. Barr's window in King Street, but I will say more about them next year. I have not confined the experiment to Daffodils; some mysterious bunches of evergreen leaves, which have flourished for many years here, sup-

posed, but never proved, to be *Leucojum aestivum*, have been submitted to the same test. And last, but not the least in interest, tubers of the Bayonne *Anemone fulgens*, which from year to year deteriorates here if left in the soil, were dug up early in June, and have been baking in all the sun this summer has afforded until now to be replanted side by side with some fresh from their native vineyard, and with some that have been undisturbed for three years. About the result of these and other experiments I shall have more to say next summer. C. WOLLEY DOD.

Edge Hall.

NOTES FROM FRANCE.

Prunus Pissardi.—M. Pynaert, the well-known Belgian nurseryman, thus writes in the *Bulletin d'Arboriculture* of this new ornamental Plum: "Having acquired plants of this new species as soon as it was distributed in the spring of 1882, I am, therefore, enabled to judge of its remarkable ornamental qualities, and do not hesitate to warmly recommend its culture. It is hardly as far as the past winter has afforded opportunity of judging; it is of easy culture, of vigorous growth, and the foliage retains its fine colouration all through the season. Last spring, wishing to show some forward specimens at our International Exhibition, I placed some plants of it in warmth. The young shoots in their first stages of growth were of a sombre green; it was only later on that the leaves became tinted with red, which gradually increased. M. Carrière named this new kind in memory of M. Pissard, chief gardener to the Shah of Persia, who sent it to France. It is, we are assured, indigenous near Tauris, an important town situated some 230 miles from Teheran, where it is still rare and much esteemed for the colour of its leaves, but principally for the sake of the fruits, which from the time they form are of a deep red, and are much esteemed in Teheran, where they are eaten with salt, or are employed as an ornamental fruit for dessert. *Prunus Pissardi* may be advantageously employed for the ornamentation of shrubberies, or it may be grown in the borders near the dwelling, as, in addition to being of very moderate dimensions, it has a very pleasing appearance, both on account of the colour of the foliage, the flowers, the fruit, and the colour of the bark, which is always of a shining red, rendering it constantly ornamental. It may also be grown in pots like *Spiræas* and similar shrubs, as it does not grow very high and ramifies considerably. It is certainly, I repeat, the most remarkable plant that has been introduced for a long time, and there is no doubt of its being much sought after by plant lovers generally. It is without contradiction one of the finest introductions of recent times, and we have no hesitation in propagating *Prunus Pissardi* on a large scale in the conviction that there will be a difficulty in autumn of satisfying the numerous applications that will be made for this charming little tree." M. Carrière also observes in the *Revue Horticole*, "This species is not only remarkable for the colour of its leaves, which are of an intense red in varying shades, but the berries from the time of their formation are also of a deep red, which is absolutely a new character amongst berry-bearing trees. Thus there can be no doubt that this *Prunus* will effect a veritable revolution in the appearance of the outdoor garden."

Packing Peaches.—A grower of Peaches in the south of France who annually sends a large quantity of this fruit to the Paris markets practises a method of packing them which is new to me. They are packed in light boxes, in the bottom of which is put a layer of Oat chaff; on this is placed a layer of Peaches, each one being enveloped in tissue paper and another piece of ordinary paper round that. They are not placed quite close to each other, space being left to work in enough chaff to effectually separate each fruit. Then comes another layer of chaff and another of Peaches, and so on until the box is filled. It is

asserted that Peaches packed in this way come out as fresh as when gathered; at any rate, those having this soft fruit to send any distance may take a hint from the above, as what answers on a large scale can scarcely fail to do so in the case of moderate quantities.

Pomological Society of France.—This has accomplished the twenty-fifth year of its existence, and has done and is still doing a large amount of useful work. As will be inferred from the title, its work lies solely amongst hardy fruits, and the fact of its adopting any particular one is supposed to be a convincing proof of its value for general culture. The self-imposed mission of the Pomological Society is to collect evidence from the whole length and breadth of France for or against any fruit which it takes in hand to study, and it appears to carry out its programme conscientiously and with great pains. A meeting is held annually either in Paris or in some large town in connection with an exhibition of fruits, and a committee being elected, the merits of the fruits forwarded for inspection are discussed. A consensus of favourable opinion has for effect the adoption of any particular fruit, the reverse of this causing it to be *rayé* (struck out), whilst conflicting or insufficient evidence retains it on the list (*maintenue à l'étude*). As the members of this society are spread over France, there is every chance of thoroughly proving the general utility of any fruit taken in hand or of detecting its faults, and of seeing how it behaves under the varied conditions of soil, situation, and climate. The value of such work can be well estimated by all who have had anything to do with the culture of hardy fruits, so many of which fail to realise the anticipations formed concerning them, whilst others of sterling worth are for years scarcely known or but of local fame. All who take an interest in horticulture will wish for the French Pomological Society a long continuance of prosperity and the power to carry out the good work so well performed up to the present. Is it too much to hope that something similar may be shortly instituted in this country? The recent Apple congress gave great satisfaction, and was undoubtedly a step forward; but what we really seem to need is a body of experienced men who would undertake a work similar to that which is now being carried out in France, which should not be spasmodic, but regular in its action, and the decisions of which would have real weight, and would serve as a guide to those engaged in fruit production. There are plenty of enthusiastic and able fruit growers in England, second to none in any country in skill, who would, I am sure, out of pure love take an active share in, the working of such a society.

Winter Melons.—There is a note in the *Journal d'Acclimatation* concerning a Melon commonly sold in the markets of Nice which will probably be of interest to some of your readers. It is a green-fleshed kind, and is said to keep well until January, not losing at all in the way of quality. It is very sweet, is highly perfumed, and requires no more than ordinary culture to bring it to perfection. If these lines should meet the eye of anyone who has resided at Nice and knows anything of this Melon, they would oblige by giving such particulars as they may have gathered concerning it. The note in question is by M. le Docteur Jeannel, of Villefranche, who has sent seeds to the Société d'Acclimatation. A Melon having such keeping properties ought to be valuable in this country, and I should advise English Melon growers to endeavour to procure it and give it a trial.

JOHN CORNHILL.

The gardening press.—A period of death has been followed by various new births. During the past few years a number of journals and magazines have passed away. Hibberd's *Floral World*, The *Floral Magazine*, The *Horticultural Record*, The *Gardener*, The *Gardener's Record*—these and others have gone to the bourne whence the traveller seldom returneth. Others are said to be in poor health, but making herculean efforts as the fatal foad comes within sight. On the other hand, two new horticultural papers were started within a few weeks of each other this spring, and it is said another is projected and will soon be issued. These new papers have for the most part taken *Gardening* for their model. The next will, it is said, be on a different plan, but bears the same price.

PLANTS IN FLOWER.

Arcotis arborescens.—Although not hardy, inasmuch as it needs the protection of a cold frame in winter, this is a very useful plant on rockwork during the summer months. It grows about 2 feet high, and is well furnished with finely pinnated, irregularly toothed leaves and large, handsome, white, yellow-disked flowers. The hotter and drier the situation the better it seems to flower. It is easily increased by means of cuttings taken off now.

The white Agapanthus.—A chastely beautiful plant is the white variety of the old Cape Lily. Its flowers are not in any way marred by colour, the whole head of flowers, numbering some dozens, being spotless white. It is a capital greenhouse plant, and a charming companion to the original purple-blue kind. Visitors to Kew may see it if they wish in that part of the T range where the Cape plants are grown. It is a plant to be thoroughly recommended.

Ixora Duffi.—There are few plants that visitors to the Victoria regia house at Kew admire more just now than this *Ixora*, which is unquestionably the finest of the genus in cultivation so far as regards the size of the flower-clusters. These on the Kew plant measure some 9 inches or 10 inches across, and form quite a symmetrical rounded mass of bright orange-red. It does not appear, however, to be so floriferous as some of the other kinds, as there are but a couple of heads on a good-sized plant. The foliage is luxuriant and the growth vigorous, which enhances the appearance of the flowers. It is a plant that everyone who has a stove should grow.

Palavia flexuosa.—Amongst annual Malvaceous plants, few, with the exception of *Malope trifida*, are to be compared with the handsome and delicate *Palavia flexuosa*, and certainly none are more easily grown. It grows about a foot in height, is rather straggly, much branched, and well clad with deep, Fern-like foliage. Its flowers, which are very handsome, are about the size of a florin; the upper part of the petals is rose coloured, and they merge into a charming white ring with a brilliant red column in the centre. Treated as a hardy annual, and sown in spring along with the others, this does very well, giving little or no trouble and flowering as freely as most other annuals.

Morina Coulteriana.—This is now in flower on the rockery at Kew, and seems to be an acquisition. It was, we believe, collected in Afghanistan a few years ago by Dr. Aitchison, and this is the second year of its flowering. It resembles *M. longifolia* in general habit, but has much narrower leaves, longer spines, and never more than two together. It grows from 1 foot to 2 feet in height, terminating with a large dense head of beautiful primrose-yellow flowers, quite rare in a *Morina*, and certainly very handsome. As far as is at present known, seed is not very freely produced, and increase will have to be effected by division of the roots. *M. betonicoides* and other natives of the Himalayas are said to be much handsomer than any yet introduced.

Out-of-door Begonias.—I send you a few *Begonia* blooms from a bed in the garden, doubles included; they are all seedlings, and very good they are for beds; no sort of weather affects them, wet or dry; they are now blooming profusely and seem likely to continue so. When planted, which was done in plenty of good soil and freely manured, the ground was carpeted with *Herniaria glabra*, which prevents the blooms from being splashed by the soil. When raining the scarlet colours show up with more effect, carpeted with green.—E. MOLYNEUX, *Swanmore Park, Bishop's Waltham*.

** An excellent gathering, such as we should have hardly surmised to have come from open-air plants. The strain is excellent, and the colours well varied, bright, and effective.—ED.

Helianthus cucumerifolius.—Anyone in search of a really good border annual would do well to give a fair trial to this pretty Sunflower. Some few years ago it was not uncommon, but it has again died out, probably from its shyness as regards ripening seeds in wet seasons. Sown in early spring along with other hardy annuals in moderately rich soil, it gives no trouble whatever. It requires no staking, which not only destroys the natural form of the plant, but cramps and

suffocates the buds and half-opened flowers. It grows from 1 foot to 2 feet high, is much branched, and has a dense bushy habit. The flowers, which are all about one height, are bright sulphur-yellow when first open, changing afterwards to light orange. The leaves are oval, slightly cordate, rough to the touch, and evenly serrated.

Lapageria rosea splendens.—Such is the name which has been given to an exceptionally fine variety of the *Lapageria* at Nash Court, Maidstone, flowers of which have been sent to us by Mr. Dowdeswell. They are not only much superior in size to those of the ordinary variety, but the colour is finer, being deeper and richer and with the petals conspicuously and profusely marked with irregular blotches of white. We have seen this Nash Court variety before, but the flowers now sent appear to represent it better than usual. As the name *splendens* has somewhat of a vague meaning, we would suggest that it be called the Nash Court variety, which would be much more distinctive, as there are other forms in cultivation under similar names. Some excellent flowers of the white variety are also sent, and they are also remarkable for good growth.

The Zanzibar Water Lily.—This fine new aquatic plant may now be seen in great perfection in the old Water Lily house near the Palm house at Kew, where there are a couple of plants flowering profusely. This variety far eclipses all the others, both as regards the size of the flowers and their bright colouring; so that if one has only room for one Water Lily in a stove tank, this one should be procured if possible. Botanists call it only a variety of the well-known *N. stellata*, but it is so distinct from that kind in every respect, that it may well be regarded as a distinct species—at any rate for garden purposes. This new addition to our garden aquatic flora must be looked upon as a great gain, and we could wish that nurserymen were able to supply it to those who wish to grow it. The Zanzibar Water Lily was, it may be remembered, the subject of a coloured illustration in THE GARDEN a short time since.

Two new Begonias.—I send you blooms of two double *Begonias* raised by Mons. Arnoult, and sent out this year by Messrs. Thibaut & Keteleer. These are from the open ground in Mr. Gambleton's garden at Belgrove, where *Begonias* flourish and bloom in marvellous beauty. The warm and dry summer with careful watering has brought them to greater perfection than usual. Madame Arnoult, a splendid double of a shaded rosy pink colour, is the greatest acquisition amongst the lighter shades and worthy of the honour of a first class certificate, which it received on August 12 at South Kensington. Blanche Duval is also a most desirable variety of fine and distinct form, white tinted with sulphur and palest red.—J. T. Poë, *Riverston*.

** Both uncommonly fine sorts with large rosette-like blossoms. Madame Arnoult is of an extremely delicate and pleasing colour, and the same may be said of Blanche Duval.—ED.

Ligustrum japonicum.—Where this, the Japanese Privet, is grown, it is making its presence conspicuous, not only by its large clusters of white blooms, but also by its powerful odour, which is not really unpleasant, though not so agreeable as could be desired. It is a valuable shrub, inasmuch as it flowers just at the present season when shrubberies are well-nigh flowerless. Its shining foliage sets off the flowers admirably. We saw it a few days ago in Mr. Stevens' garden, at Byfleet, where, amidst other shrubs and plants which were parched for want of water, its luxuriant foliage stands out conspicuously. It is a capital shrub to have where bees are kept, as they seem to be specially fond of it, and no doubt they get a good deal of honey from the flowers. Mr. Stevens has now stocked his garden with bees, in order to observe which plants they are most fond of, which they visit most, and which they avoid. The result of his observations will be interesting to bee keepers.

Redbraes Picotee.—This new *Picotee* has won such universal popularity during the short

time that it has been before the public, that there is little occasion to eulogise it here. We are reminded of its beauty and value as a garden flower by a large handful of blooms sent to us during the week from its birthplace—the Pirig Park Nursery at Edinburgh. As soon as it expanded its first flower the Messrs. Dicksons thought highly of it, and marked it as a coming flower. This was only two or three years ago; since then it has been widely distributed, and it is a familiar object in southern gardens during Carnation time. Its good qualities lie not only in its blooms, but in its sturdy, vigorous growth and floriferous habit. The flowers are of moderate size, with good broad white petals, heavily edged with reddish purple. If Messrs. Dicksons can raise other sorts of a similar race, but of different colours, they would receive the thanks of those who love to grow Picotees and Carnations that take care of themselves in the open border without any coddling treatment.

***E. tanacetifolia*.**—For free flowering habit and a neat style of growth, none of the acaulescent or stemless (*E. tanacetifolia* are to be compared with *E. tanacetifolia*. It is a native of the higher parts of Sierra Nevada, and proves to be perfectly hardy with us in a dry sunny position on the rockery, where it expands its pretty sulphur yellow flowers all through the summer. A comparatively new species not having found its way into general cultivation was found by Torrey and Gray in the survey of the Mississippi and Pacific Railroad. As regards the root, it somewhat resembles *E. biennis*, being thick and tapering with but few fibres; the leaves, which are produced in rosettes on the top, are from 3 inches to 4 inches long, finely dissected or irregularly notched, and covered with a fine white pubescence. The flowers are very handsome and freely produced. This *E. tanacetifolia* is a most beautiful subject for the rockery, where, however, it requires plenty of room, as it increases by short underground roots or stems, from which it may be propagated easily, provided care be taken to insure a good proportion of the root with the cutting. Care, too, must be taken to ward off damp, cuttings being very liable to rot off at the neck. This plant does not ripen seed freely in this country, except in very favourable seasons.

***Linaria Peloria*.**—A striking instance, if that were needed, to show that our native plants are not appreciated so much as they deserve to be, is clearly set forth in this *Linaria*, a natural variety or monstrosity of *Linaria vulgaris* found plentiful on our heaths. This *L. Peloria* is one of those peculiar prodigies that might develop wonderfully under good and careful cultivation, if one may be allowed to judge from the size and beauty of the flowers attained under ordinary conditions; the intensity of the orange colour near the mouth has increased considerably. It is a first-rate border plant—indeed one of the best, and a most profuse flowerer, blooming in uninterrupted succession from early summer, and to all appearance likely to continue until cut off by early frost. For flower garden work, or for beds in positions not requiring much attention, this is a charming plant; it grows only about 2 feet high, is bushy in habit, being well clothed with lovely narrow glaucous leaves; the flowers are produced in spikes at the extremities of the branches, each from 4 inches to 8 inches long. They are bright or sulphur yellow, and instead of having one spur, as in the common *L. vulgaris*, there are five, very long, and regular—a very interesting monstrosity; the mouth of the corolla is deep orange and very handsome. It is easily increased from cuttings placed in pots in a cool frame, and is perfectly hardy in the open border.

Variegation transferable.—In THE GARDEN (p. 206) there is an account of the transfer of variegation from *Lonicera aureo-reticulata* to the leaves of a *Convolvulus*. I am familiar with similar instances. In my late garden at Blackheath I grew some fifty different Ivies, and found that whenever *Hedera Helix aurea robusta* intertwined with green Ivies the variegation of the leaves was communicated, even to Ivies of the

most different character, such as *H. algeriensis*, *donnerailensis*, *chrysocarpa*, and others. I had a Holly hedge which was all green certainly for more than a quarter of a century, but a variegated sport arose, as I think the result of the variegated varieties of Holly that I cultivated. I have trained several variegated Ivies amongst an *Ampelopsis Veitchi*, and lately a few leaves of the creeper have become variegated.—J. JENNER WEIR, *Beckenham*.

WORK DONE IN WEEK ENDING AUGUST 27.

AUGUST 21 AND 22.—So far as work in the open air is concerned, beyond the usual daily clearing up, we have not been able to do anything else than Potato digging, and if we could well have postponed such work, we certainly would have done so for the men's sake, as the scorching sunshine has been most trying, but there appeared to be no choice in the matter, at least not if the work was to be kept well in hand, for so many jobs have had to be left till the drought ends, that whatever will help us to meet the pressure that will then take place must now be done, and all except very late varieties of Potatoes being ripe, they have been dug up and housed in splendid order, there being scarcely a diseased tuber, and what is very remarkable all kinds are of a moderate size, there being few either very small or very large amongst any of the sorts. We store them in a cool cellar, that if needs be can be well ventilated without admitting daylight, and thus we avoid greening. In picking up the Potatoes the usable sizes are first selected, then the seed, and next the very small or bad; the first for lack of space are stored away thickly, and this not being done till they are quite dry, they keep just as well as if put more thinly. The seed are put thinner, and in places more airy and light, as it does not matter about their getting a bit green, but it does matter about their being laid in heaps so thick, that premature shoots are emitted. The small tubers go to the pigs, being used at once. As the stores of the usable size are reduced and more room afforded we like to spread them all out to prevent any unnecessary decay that might take place owing to a diseased tuber being present. Indoors the past two days have been (one must soon write as usual) most trying, not as regards ventilation—that has been simple enough, for all has had to be put on—but in regard to doing the necessary work under such tropical conditions. Watering has been heavy, syringing and washing of trees (Peaches and Nectarines) indispensable, and regulating the shoots on the trellis, that all might have a fair share of sunshine. Pines we still shade, Vines too, with a slight sprinkling of whitening on the roof, and there can be no doubt of the benefit derived from its application, as all the foliage is green except such as was exposed to the full force of sunshine when it first began to shine so fiercely. Watering of inside borders we still practise, even though the fruit is well coloured; we have always done watering, irrespective of weather, whenever the borders have been dry, and as yet have not observed any evil consequences, except a score or two of cracked berries on Muscat Grapes, which is a small matter in comparison with the shrivelling of the entire crop owing to want of water.

AUGUST 23.—Our general overhaul of the flower garden to-day included the taking off a quantity of Pelargonium cuttings, for the double purpose of propagation and of adding to the neatness of the beds, which were getting too crowded, as were also some of the foliage plants; and to relieve adjoining plants, a large leaf here and there of *Ricinus*, *Solanum*, *Dahlia*, &c., has been cut quite off, and undergrowth plants pinched hard back this season, *Alternanthera* and *Coleus* needing as much of this labour as does the common *Pyrethrum Golden Feather*. Fuchsias and single Dahlias do not relish such a summer, though with copious supplies of water and syringing overhead in the evenings they present a moderately effective appearance. The persistency of seeding that single Dahlias manifest is incredible, and another hot season or two will about tire us of picking off

seed-pods to keep the plants in a flowering state. The beds being now in perfection, I made note to-day of the best arrangements, that is, of the most pleasing and lasting, about which I hope to give some account shortly.

AUGUST 25.—Hoeing principally; this operation has proved of immense benefit to our kitchen garden crops, for, in spite of the drought, nothing has suffered except Peas, whilst as to weeds they are simply *nil*. The final pinching has been done to Peaches, Nectarines, and Apricots; all sub-laterals have been pinched to within a couple of eyes of the main shoot, and some few of the latter have been taken out to give increased space to others, our aim being to have light reach every shoot and every fruit that is now ripening. Having, as long as water and time to apply it would hold out, given copious supplies at root and top, the fruit is fine and the wood and foliage good as can be; some of it will unfortunately suffer through our having to thicken up the fruit to preserve it from wasps, which are very numerous. The nests are being taken, and we hope soon to be able to so reduce their number that thick protection may be dispensed with. Apricots are nearly over, but we shall continue to water and syringe the trees just the same as if they were full of fruit. Pears on walls being all but fruitless, wood growth has been unusually great, and we have taken it off without mercy—I may say just in the same fashion as Peaches—as the walls being covered, there is no space for extension of the trees. If I may use the phrase, restrictive pruning is therefore compulsory. But it answers well enough, as there is plenty of healthy spurs, and having been regularly reduced or thinned out at the winter pruning, the new summer buds have a sufficiency of space to ensure sunlight reaching them. On standard trees we leave young growth to replace the old that is taken out in winter, but all unlikely wood for that purpose and weak shoots generally are now being cut or pinched off. Propagation of flower garden plants is our main work about the houses. Pelargonium cuttings are being put in on a south border, as named in a former note, and other and tenderer kinds of plants in manure frames, shading being indispensable for this last section till they have taken root, for if once they flag, the probabilities are failure to strike, or, at any rate, without numbers of losses. Watering of borders and Pines, cutting out a few shanked berries in late Muscat vines, tying out Chrysanthemums, and potting Bouvardias are the other jobs that have been done to-day.

AUGUST 26 AND 27.—Clipping Grass edgings on roads and walks, sweeping up under Limes, cutting Brambles and Bracken, and otherwise clearing walks in the woods, have formed the greater part of our outside duties. The work in the houses has also been of a purely routine character; watering, airing, and propagation, together with weeding and pinching runners off pot Strawberries, and tying out of Melons and Cucumbers is about all that has been done.

HANTS.

NOTES OF THE WEEK.

Daffodils.—As a sign of the times, we have to note that tradesmen are issuing special catalogues of hardy flowers, and in some cases of special classes of plants. We have to hand from Mr. Baylor Hartland, of Cork, a catalogue entirely devoted to the Daffodils. It comprises nearly a hundred varieties, most of which are briefly described. The catalogue, which is an excellent production, is out of the ordinary run of trade lists.

The Dundee International Show.—There is every promise of the show to be held at Dundee on the 11th, 12th, and 13th of September being an important affair; it will no doubt equal in extent the international shows held during the past few years at Manchester and Edinburgh. Upwards of £1000 are offered in prizes. The schedule includes upwards of 200 classes, the prizes ranging from £20 downwards. The trustees of the Veitch Memorial prizes offer the usual medals and prizes of £5 for the following objects: 1, for the best specimen Orchid in flower; 2, best specimen of a stove or greenhouse plant selected from classes 4 and 5; 3, best two bunches

of Grapes (one variety) selected from classes 12 to 24 inclusive. The competition is restricted to amateurs or amateurs' gardeners.

New bridge in Regent's Park.—By order of the Commissioner of Woods and Forests a number of men commenced the other day the foundation of a bridge which is to be erected over the ornamental water of the Regent's Park. Some few months since a large number of indignation meetings were held in Marylebone, agitating for more space in the park to be devoted to the public. The result of these meetings having been considered by Mr. Shaw Lefevre, several acres of ground which had previously been kept exclusively for the residents of the terraces overlooking the park have been thrown open, taking in a large piece of land between Hanover and York Gates. About midway between is Clarence Gate, leading direct from Baker Street, and it is directly opposite this that the bridge is to be erected, making a direct line of communication from the south-west and west-central districts to the centre of the park. The bridge, which will consist of ornamental iron lattice girders, with moulded Portland stone pilasters on either side at each end, will be 10 feet wide, with a 4-foot heading from the water to allow boats to pass under it.

ORCHIDS IN FLOWER.

Laelia elegans Dayana.—The finest plant probably in this country of this rare and beautiful *Laelia* is now blooming finely at Mr. William Bull's nursery, King's Road, Chelsea. It has three spikes, two with seven flowers each and one with five.

Cypripedium Lawrenceanum majus—Such is the varietal name which might appropriately be applied to an extraordinarily large-flowered form of this Lady's Slipper which has been sent to us by Mr. Alex. Curle, of Melrose. The flower measures 5 inches across; the dorsal or upper sepal is 2½ inches across by 2 inches in length, and the colour of the whole flower is deeper and finer than usual.

Spathoglottis Fortunei.—This terrestrial Orchid possesses two desirable qualities—it is pretty, and distinct from the general run of Orchids. There is now a luxuriant potful of it in the cool part of the Orchid house at Kew flowering profusely. It has tall, slender flower-stems, terminated by showy flowers coloured with a clear chrome-yellow. The leaves are few, and proceed from tiny bulbs, which just show themselves above the surface. Flowering at this season, it is doubly valuable, and it remains in perfection a good while.

Disas in the Isle of Wight.—The plant I alluded to the other day as having been in the open border for more than a year is now in blossom, and it shows that if *Disa grandiflora* will live in the open ground, it will do better than in a pot. If the flower were not so exceedingly handsome, I would pluck it and send it to you; but I am sure I may say that it is nearly twice as large as the last blossom I forwarded, and quite as good in point of colour. If anyone could spare me a bit of the large variety you speak of, viz., *Disa grandiflora superba*, I should esteem it to be the greatest possible kindness, and I would gratefully send him anything I can manage in return for it.—H. EWBANK, *St. John's, Ryde, Isle of Wight.*

August-flowering Orchids.—August and September generally are considered to be the duller months for Orchid bloom, but, as illustrating the number of distinct kinds that can be had in flower at the end of August, we append a list of the Orchids which composed a bouquet presented by Dr. Paterson, of Fernfield, Bridge of Allan, to H.R.H. the Princess of Wales on the occasion of the royal visit lately paid to the Forestry Exhibition at Edinburgh. The following is the list alluded to, viz.: *Vanda tricolor* Patersoni, *Vanda teres* Andersoni, *Cattleya Leopoldi* variety *guttata*, *Brassia maculata* *guttata*, *Miltonia spectabilis*, *Odontoglossum Alexandre* and *Uro-Skinneri*, *Odontoglossum tripudians* and *veixillarium*, *Odontoglossum Rossi* and *Rossi majus*, *Odontoglossum Lindleyanum* and *Pescatorei*, *Disa grandiflora superba*, *Masdevallia Davisii*, *Veitchii*, and *amabilis*, *Masdevallia maculata aurea*, *ochthodes*, and *Lindenii*, *Angraecum eburneum*, *Aerides*

Reichenbachii and *quinquevulnerum*, *Cypripedium barbatum*, *javanicum*, and *Sedeni*, *Cypripedium longifolium*, *Harrisianum*, and *Roelzii*, *Dendrobium chrysanthum*, *Stenia fimbriata*, *Maxillaria grandiflora* and *venusta*, *Dendrochilum filiforme*, *Epidendrum vitellinum* and *vitellinum majus*, *Epidendrum prismatocarpum* and *cinnabarium*, *Phalaenopsis Luddemanniana*, *Saccolabium Blumei* *majus* and *gemmatum*, *Oncidium Weltoni* and *lingaeforme*, *Oncidium Harrisonianum*, *Mesopididium sanguineum* and *vulcanicum*. Around the basket were sprays of *Abies Albertiana* and *Lapageria rosea* and *alba*.

INDOOR GARDEN.

WINTER TREATMENT OF CAMELLIAS.

AMATEUR cultivators of Camellias often find not a few difficulties in the way of managing and flowering them successfully, especially during winter. The plants drop their buds at a time when the cultivator is looking hopefully for a pleasant head of bloom. When housed for the winter, watering must be carefully done, for the giving of either too little or too much will cause the buds to fall off, and the whole season's labour to be lost. What actually causes the buds to fall is the question that exercises the mind of the disappointed cultivator. A bad system of watering has something to do with it. A little water applied frequently—that worst of all known forms of mismanagement—will render the soil moist, and in some cases even sour, for half way down the pots, whilst the lower part of the ball may be as dry as dust. There is nothing more difficult than to get persons to observe this simple rule, "Never water till a plant really requires it, and then soak it;" and an uncongenial soil is also a cause of bud dropping. Many, knowing that Camellias cannot grow in a strong heavy soil, mix for them peat and loam. In this case peat acts mechanically at first in keeping the particles of loam apart, and for a time the Camellia will grow well in this mixture. But, as loam contains potash and lime, and peat is full of humic and mimic acid, they act on each other, and the result is a sour soil, in which Camellias become unhealthy. Sods cut as if for forming a Grass plat taken from a sandy loam, particularly if it grows Foxglove, Heath, or Fern, chopped, or, better still, pulled to pieces when quite fresh, is the best soil for Camellias without any admixture. If not sandy enough, silver sand may be added. If a suitable loam cannot be obtained, the next best soil is a good fibrous peat, unmixd with anything else. Peat soil ought never to be mixed with anything except white sand, if sand be required. Camellias often do well in pure peat, particularly when assisted with a little weak guano water or soot water when growing. The former must be very weak, certainly not more than one ounce to a gallon of water, given once or twice a week. Another cause of Camellias dropping their buds is doubtless a poor exhausted soil from which the plants gain little or no support. A plant too which has formed its buds under glass is often turned out of doors, where it is liable to be soaked by heavy and continuous rains, and is night after night exposed to heavy dews. Under these circumstances it will often look healthy; but when brought into a glass house and subjected to a dry heat with possibly not enough water at the roots for days together, it is not surprising that the shock produced by so great a change should be injurious. Many a plant also suffers from the extreme dryness of the air during frosty weather. I have often been obliged to water the pathways during frost, and sometimes have even had the evaporating troughs filled with water in winter. Perhaps, however, the most frequent cause of the shedding of Camellia buds is excess of moisture rather than too little of it. The amateur grower should so manage as to keep the soil in which the plants are growing something between dry and damp. When water is administered it should be of the same temperature as that of the house in which the plants are growing. Cold currents of air playing directly on the plants are also injurious at times. R. D.

Plumbago capensis.—This beautiful greenhouse plant is now beginning to flower, and very attractive it is at this time of year. It is one of the most accommodating plants we have, growing and flowering in profusion even in houses that have a much higher temperature than that of a greenhouse. We have it planted out in three different houses, in one of which some flowers may be seen nearly all the summer and autumn, the difference of the flowering season being caused by the amount of heat which it receives. Its pale blue blossoms are so distinct and pleasing, that they are always admired. This *Plumbago* grows freely planted out in tolerably good soil, but its cultivation in pots is seldom satisfactory. Sometimes we hear of it flowering freely in summer outside, and with well ripened old plants and a suitable season such results may be obtained, but under other conditions it is uncertain. A pillar or rafter of a greenhouse or conservatory is best if only one place be chosen, and in such a situation a healthy plant will soon grow and establish itself. It should be allowed to grow to the height required, and then be pruned in annually in autumn after growth is completed. The best results are obtained by thinning out all the weaker growths when quite small, thus encouraging others. Copious supplies of water are needed throughout the summer and until the wood is ripened, when it should be gradually withheld during the resting period. It may be well to point out to beginners that *P. capensis* flowers on the points of the shoots, and that consequently the latter must be allowed to grow their full length without stopping. They grow freely and hang down gracefully from a pillar or rafter.

Dielytra spectabilis best in pots.—This lovely hardy herbaceous plant, now better known as *Dicentra spectabilis*, is one of the very best things that can possibly be had for pots, which is really the only entirely satisfactory way of growing it; for though hardy, as just stated, it is apt to become injured by spring frosts, on account of the soft young shoots pushing up so early out of the ground, and when they get cut by cold the plants become very much crippled and weakened for the rest of the season. This being so, they should, if planted out at all, be placed in the most sheltered positions that can be found in the borders, one of the best places being on the south side of a wall or fence, where at night during April it is advisable to stick a few evergreen branches around the crowns and cover them with an inch or two of Cocoa-nut fibre or half-rotten leaves to shelter and protect them. Grown in pots and kept under glass, the *Dielytra* is even more lovely and delicate looking than it is ever seen out in the open, and those who have plants will do well to take some of them up and grow them on for the greenhouse. Not only is this plant readily amenable to pot cultivation, but it forces easily, although it should not have much heat, but be brought on slowly, as it is only by this gradual and natural process that strong shoots are formed. In lifting the plants care should be taken not to break the roots, which are large, fleshy, and brittle, and if got up intact soon form fresh fibres to feed and push up the strong crowns. If any increase of stock is desired when digging out the plants, that is the time to effect it, as they bear division and may be cut through, and as many made as there are shoots or crown buds, as every such portion will grow. This plant may also be increased by means of cuttings, which root freely if taken off after the young shoots become a little firm, at which time they strike better, as they are less liable to damp.—S. D.

Choisya ternata.—Mr. Roberts is very successful with this plant at Gunnersbury. He grows a large number in pots, rather confining their roots than otherwise, and during summer they are plunged out-of-doors, when they set their buds; when they flower they are fed with a little liquid manure. Anyone desirous of flowering this plant successfully should do all they can to encourage sturdy shrubby growth, a condition under which the specimens flower best. It is not necessary to starve the plants to secure this, and they

should be kept somewhat potbound, but not starved. When planted in a south border and fully established, they become objects of great beauty.—R. D.

HYBRID GREENHOUSE RHODODENDRONS.

GREENHOUSE Rhododendrons seem likely to become even more popular than they have been judging by the increased interest taken in them and by the many new kinds that have been sent out during these last few years. Several handsome

tendency to run up thin unless such means are resorted to in order to check its growth. *R. exoniense*, the subject of our illustration, is a hybrid between *R. Veitchianum* and *ciliatum*; its flowers strikingly remind one of those of the former, while in habit and hardiness it resembles the latter. From an ornamental point of view, however, it is decidedly superior to both, as *R. Veitchianum* is by no means good in habit, especially when young, while this is as dwarf and compact as an Azalea. The flowers are white with a creamy stain in the centre, and the back of the petals is faintly tinged

full air on during the winter. Thus managed they flower about April. We have had them in bloom during all the spring months from January by putting them in heat, treatment which they seem to bear very well. We have had a plant of it out-of-doors for two winters (certainly mild ones), and in the open ground it forms a dense growing low shrub. We use the flowers for bouquets, wreaths, &c. They associate well with white Azaleas, relieving their glaring whiteness, if I may use the expression, by their ivory-white tints." Although it may grow out-of-doors at



Rhododendron exoniense. Engraved for THE GARDEN from a photograph.

hybrids, all with white or nearly white flowers, have been obtained by intercrossing *R. ciliatum*, *Edgeworthi*, *Dalhousiae*, *formosum*, and *Veitchianum*, these hybrids being extremely free bloomers and their flowers for the most part agreeably scented. The dwarf *R. ciliatum* has been largely employed as a seed-bearer, many hybrids having been raised from it. One of the first was *R. Princess Alice*, a hybrid raised between *ciliatum* and *Edgeworthi*. This has large sweet-scented flowers, but, like all the descendants of *R. Edgeworthi*, if dwarf bushes are desired it must be pinched back freely when young, as it shows a

with rose. They are very sweet-scented and average a little over 3 inches in diameter. The profuse way in which it flowers is well shown, and also its dense bushy style of growth. This *Rhododendron* has already had its merits duly recognised, for both the Royal Horticultural and Botanic Societies have awarded it certificates. Mr. Robert Veitch, of Exeter, the raiser of it, says: "We treat our plants in exactly the same manner as we do our Azaleas, *i.e.*, keep them close after flowering and syringe them well. Their wood, when made, is ripened in the same house in which they remain, with

Exeter, the greenhouse is doubtless its proper place, for it is by no means likely to prove hardy. *Edgeworthi*, one of its parents, requires protection, except in very sheltered spots, and the *Moulmein R. Veitchianum* is still more tender.

Another variety of Continental origin claims to be a descendant from *R. Veitchianum*, *viz.*, *R. Forsterianum*, but as it is the result of a cross between that kind and *R. Edgeworthi*, its habit is altogether taller than that of *R. exoniense*, which partakes of the dwarfed character of *R. ciliatum*. *R. Forsterianum* was raised by Mr. Otto Forster in Austria, and bears, perhaps, the

largest blooms of any of this class of Rhododendrons. The flower is white, tinged in the centre with lemon and the edges of the petals prettily crisped. Another grand variety is *R. Sesterianum*, a variety raised between Gibsoni or formosum and Edgeworthi. In general characters it is a good deal like Forsterianum. *R. Duchess of Buccleuch* is also much in the same way. These different hybrids of Edgeworthi seed very readily; therefore, as a rule, any number of plants can be raised from them, and as many of them vary to a certain extent, different forms may occasionally be met with bearing the same name.

A very distinct and handsome hybrid is Countess of Haddington, the result of a cross between *R. Dalhousie* (itself a primrose-flowered kind, but very straggling in growth) and *R. ciliatum*. The large bell-shaped blossoms of this variety are when first expanded pinkish, but afterwards they become almost white. As a proof of the variations to be found among seedlings, we may mention that out of a dozen plants obtained from seed there was a perceptible difference amongst all of them, especially as regards the colour of the flowers. Thus extra good types must be increased by cuttings or grafts. Countess of Haddington forms a large, handsome bush, but it also flowers freely in a small state.

Another group of hybrids has been obtained by Mr. Davies, of Ormskirk, by intercrossing Edgeworthi with the dwarf free-blooming *R. multiflorum*. These are distinguished by dwarf twiggy growth and great profusion of bloom—properties which eminently fit them for flowering in small pots. This class of Rhododendrons is more popular in the north than in the south, where they seem at present to be but little known. They are named Countess of Derby, Lady Skelmersdale, Mrs. James Shawe, Countess of Sefton, and Duchess of Sutherland, all of which possess a strong family likeness. The blooms, which are white, are in one or two cases slightly tinged with pink, and are deliciously fragrant. The advantage possessed by all the above hybrids over most of the recognised species is the freedom with which they flower when in a small state, though in this respect some of their parents nearly approach them, especially if propagated by cuttings. In this way doubtless some of the larger Himalayan kinds could be induced to bloom in less time than when raised from seed, but as a rule a good deal of space is required to grow them to perfection. Greenhouse Rhododendrons are, however, so effective when in bloom, as to be well worth devoting a house to them; during the flowering season the display made by them would be most interesting, and they need only sufficient heat to keep out frost.

There is yet another class of greenhouse hybrids that need rather more heat during the winter than the preceding; indeed they do best when kept during cold weather in the temperature of an intermediate house. To this section belong *R. jasminiflorum*, *javanicum*, *Lobbi*, and the various hybrids raised therefrom. Of the latter, the oldest and best known is the pink flowered Princess Royal, but there are many others, such as Duchess of Teck (buff), Duchess of Edinburgh (rich glowing crimson), Taylori (pink with a white tube), Princess Alexandra (white), Maiden's Blush (pale rose), and Duchess of Connaught (bright red). These kinds bloom at almost any season of the year; indeed under liberal treatment they are rarely ever out of flower. In a cool position in the stove or in an intermediate temperature they may be had in flower throughout the winter. ALPHA.

Montbretia crocosmæiflora.—This is amenable to pot culture, and when used either for greenhouse or conservatory, it supplies a colour which is but little represented by plants commonly employed for that purpose. It is said to be the result of a cross between *Tritonia aurea* and *Montbretia Pottsi*. Its growth, however, most resembles that of the *Montbretia* and it flowers about the same time, but its blooms are more like those of the *Tritonia* than the *Montbretia*. From the bulbs great numbers of stout underground shoots are

produced that, if uninterrupted, push up and form a colony at some little distance from the parent plant. These in their turn increase, and thus a large clump is soon formed, which when in bloom is very beautiful. If grown in pots the progress of these shoots is of course checked. Though nearly hardy, we keep our plants of this *Montbretia* in a cold frame during winter, never even at that season allowing them to become very dry, and we pot them before growth commences in spring. The soil used is a good turfy loam with an admixture of leaf mould, well decayed manure, and sand, care being taken to ensure thorough drainage. When all danger from frost is over, the plants (or rather the pots with a number of plants in them) are plunged to their rims in the open ground, care being taken to keep them properly supplied with water during summer, for this *Montbretia*, in common with the better known *M. Pottsi*, has often the by no means desirable habit of assuming a sickly tint just before flowering, which detracts a good deal from its ornamental appearance. I find those kept on the side of dryness to be more liable to it than those that are treated more liberally in the matter of water. As our pots are thoroughly well drained, we give copious supplies of water when the plants are in full growth, and about once a week they are given a dose of weak liquid manure, which seems to benefit them greatly. A plant so prolific in the way of suckers as this is can, of course, be increased easily enough, all that is necessary being to split up an old clump into as many pieces as are required.—H. P.

BASKIN HILL, DRUMCONDRA.

THE name of the owner of this place and garden—the Rev. F. Tymons—is familiar to readers of THE GARDEN. He is an ardent lover of florists' flowers and a keen and successful cultivator of herbaceous plants. By one of those caprices of fashion which—sometimes reasonable and sometimes the reverse—make great changes in our surroundings, the north side of the city of Dublin, once the fashionable side, has given place to the south, and as in the city itself, so in the country around it, the rush of villas, &c., has been towards the Dublin mountains, and Wicklow especially, while the northern side has been at a standstill; hence it has more of the country and less of suburban appearance, and stone walls and formal avenues are less the rule than on the southern side, while good views of the sea are to be had from many points. Baskin Hill is a low, one-storied, comfortable bungalow-looking house, and from the hall door good views of Howth and Ireland's Eye are to be had. It is 2 miles from the Portmarna Station of the Dublin and Drogheda Railway, a place which I well remember in my early days, as our resort when entomologising. Here my friend rejoices in

A THOROUGHLY GOOD OLD-FASHIONED GARDEN, walled in, and containing within it many precious things. While I call it old-fashioned, I must not forget that while our fathers and grandfathers (and this garden has been in Mr. Tymons' family for eighty years) cultivated and rejoiced in these old flowers, the enterprise and labour of modern gardeners have led to an immense increase in the number of kinds, and while the taste for herbaceous and alpine plants goes on at its present rate, we may be quite sure that no part of the world where subjects fit for our out-of-door gardening can be had will be left unransacked. There is no one genus of the old-fashioned flowers of our gardens that has not received valuable additions during the past twenty years, and the cry is "still they come." When, then, anyone with this taste has the means of gratifying it, a source of almost boundless pleasure lies before them, especially having that charm of constant variety. Our forefathers cultivated Delphiniums, but they had not those exquisite varieties that we have. They had their *Aquilegias*, but not such as *cærulea*, *chrysanthia*, and many others of recent introduction, and they had not their rock gardens and their bogs, where some of the choicest rarities are to be seen. On entering the garden one is shown two small round beds of

Echeveria secunda glauca in full bloom, which have stood for twenty years, thus proving, at least in this locality, its entire hardiness. In the centre of the garden is a very nicely planned and natural looking piece of rockwork, where many things often accounted difficult are doing well, and where the dogmatic statements of some authorities are disproved. Thus we have been told that the pretty, but often impracticable, *Campanula Allioni* dislikes limestone, while here it is flourishing in almost pure limestone soil. Here, too, were to be found *Gentiana verna*, *Androsaces*, &c.; but it would be needless for me to enumerate the many good things here cultivated. It would be just simply to take Ware's, Paul's, Backhouse's, or Dickson's catalogue and select the very best of the plants there described; and yet this would not be sufficient, for here is a grand, noble-looking foliage plant which I can find in no catalogue, but which both here and at the College Gardens struck me by its grand and beautiful leafage—*Verbascum olympicum*, worthy indeed of the gods whose seat the mountain was. The leaves are 2 feet in length and of a beautifully soft texture and of a yellowish tint. It may seem an absurd comparison, but it has somewhat the texture of fustian, and is in truth a grand-looking plant. We sometimes hear (and, indeed, I have said so myself) that *Delphinium Belladonna*, that most exquisitely coloured of all its tribe, is more difficult to manage and smaller in growth than most of its congeners. Well, here I saw one clump of it fully 5 feet through, and which bids fair to have spikes some 6 feet in height, and as vigorous in habit as any Larkspur I ever saw. Again, we are told over here that the white Martagon Lily is scarce, and it is not unusual to see it marked at 3s. 6d. and 5s. in the catalogues. Here were grand clumps of it with from fifteen to twenty flowering stems as vigorous as the common Martagon. The same may be said of the double purple. A good deal has been said about the double white Rocket. There are of this two sorts, both of which Mr. Tymons cultivates, although his favourite, and deservedly so, is the Paper-white as distinguished from the ordinary white, some such difference as is to be seen in Roses, in the slightly suffused bloom of Madame Lacharme and the dead white of Merveille de Lyon. Amongst plants I had not seen before were *Ajuga Broxbanki*, which seems to be a strong, deep-coloured bugle. Of course all the

SPRING FLOWERING PLANTS were over, but I was interested in seeing the collection of *Auriculas*, of which I had heard so much. It was not as large as I had anticipated, but it was the most select one that I have seen. Mr. Tymons has gradually been weeding out all inferior varieties, and in this small collection of a couple of frames are to be seen all the "crack" sorts, and with them some which are rarely to be seen anywhere; in fact, his taste is too severe a one to be satisfied with any but the best sorts; and so while Hero, Lightbody's Acme, &c., are here to be seen in goodly numbers, there are no Champneys, Neills, and such like rubbish. Of course, this is the best way to grow a collection, or rather a selection. There are few people who have the courage to do this, while there are some, who, for variety's sake, will grow anything that can be got together. Mr. Tymons' plants were in frames standing on four legs some height from the ground—an old-fashioned plan (but a thoroughly good one) which I have not seen for many years. They were, of course, at this season of the year in a place facing north, and so kept cool. This is one difficulty I have to contend with, for I can get no thoroughly shady place that is not overhung with trees.

IN THE GREENHOUSES were a variety of plants in fine health and doing well. I alluded in last week's GARDEN to Mr. Tymons' culture of *Disa grandiflora*; there were several pans of it in excellent health, but, as I have said, the appearance of their growth pointed to a different variety to that which I have known for many years. There was one pan, indeed, of different growth which seemed to be of the same character as my own. I have not seen the bloom of any of Mr. Tymons'

plants, but as they bore a striking resemblance to those I saw at Glasnevin, and as I believe the plants came originally from there, I have no doubt they are identical.

AS AN EXHIBITOR at the exhibitions of the Royal Horticultural Society of Ireland Mr. Tymons is well known as one of the most successful producers of pot Roses, and the appearance of his plants, which are now out of doors in order to ripen their wood, was such as would lead one to the conclusion that they must be very good ones that could beat them. He has also one of the choicest collection of Tulips in Ireland, his stock having come originally from that earnest and most popular florist, Mr. Samuel Barlow, of Stakehill, near Manchester. How these Lancashire florists leave their mark everywhere! Pansies, too, were well done, although the dry season (unusually dry for Ireland) had told against them. I have thus endeavoured faintly to show what a wealth of floral beauty there is in this old-fashioned garden; and that when Mr. Tymons writes on any subject, he does so not from mere theory, but as a practical horticulturist, doing much of this work himself, and carefully superintending all. I spent a delightful day in this pleasant place, and I would, knowing how high is the estimation in which he is held, use the favourite Irish expression, "May his shadow never be less."

DELTA.

COTTAGE GARDENS AND THEIR PRODUCTIONS.

THIS has always been a subject of importance to those who take an interest in the welfare of the working man. It has been long acknowledged that the garden plot is a most valuable adjunct to the cottage of the labourer, and much has been done to induce the latter to turn his allotment to the best account. Cottage gardening in England may be said to have reached a considerable degree of perfection; but it is in the neighbourhood of towns and large villages, where the artisan class predominate that it is practised most successfully. The numerous horticultural exhibitions held at such places as Manchester, Nottingham, and other towns show this, but at the smaller village shows throughout the country the produce shown by cottagers is usually of the most excellent description also, and if the value of cottage garden produce could be ascertained, no doubt it would represent an enormous sum. I speak of England, for in Scotland, notwithstanding its scientific agriculture, cottage gardening is much behind, even among the farming class. The farming and labouring Scotch are not great vegetable consumers as compared with the English of the same class, and the English artisan's and labourer's garden usually far excels that of the farmer and the more respectable cottager in Scotland in the variety and quality of its produce. In the Scotch cottage garden what may be called the barest necessities only are grown, consisting principally of Potatoes, Greens, Cabbage, Beans, and a few fruits and flowers; while south of the Tweed, in the humblest gardens, where any attempt at culture is made at all, we find Potatoes, Cabbages, Cauliflower, Celery, Onions, Peas, Beans, Turnips, Scarlet Runners, Lettuce, Parsley, herbs, a fair sprinkling of flowers, and not infrequently a small orchard of fruit trees and bushes. The English working man is a better liver than the Scotchman, who is at best more frugal in his diet, and I daresay that accounts for the difference in the produce of their gardens. At all events, the difference has always been, and is now, very marked. What I desire to point out here more particularly, however, is the value of the garden to the cottager who puts it to a right use, and that any means intended to encourage him in that direction should be of a practical and definite nature, whether they take the form of prizes for the best cultivated garden, or for special examples of culture at local shows.

THE COTTAGE GARDENER is a great imitator of those in a larger way than himself, and it is abundantly evident from what we see that he may be easily led into either a right or a wrong path by example. Time was when cottage gardens used

to be the repository of many fine old-fashioned hardy plants—Lilies, Roses, Tulips, Pansies, Phloxes, Delphiniums, Lily of the Valley, Christmas Roses, and the like; but the bedding-out craze, among other ill results which it produced, changed all that, and converted many a pretty and interesting cottage garden into a jumbled mass of Geraniums, Calceolarias, Lobelias, &c.; and as the humble imitators of this style had seldom the means of carrying it out successfully, their plots at the best presented but a caricature of it, and were empty more than half the year. In fact, the cottagers on many large estates were dependent on the goodness of the landlord, and seldom troubled themselves to provide a supply of garden plants of their own. The quantity of "bedding stuff" given away from many gentlemen's gardens every year would hardly be credited; but the tax became a serious one in many instances to both employers and their gardeners, and one of the best features of the increasing popularity of hardy permanent plants is the fact that that tax will be to a great extent removed.

I only mention flower gardening as an example. It has not been so bad with the culture of vegetables and fruits, but it is a fact, too, that even in the culture of these the cottager, through his own vanity and the misdirected encouragement given by local exhibitions, has been induced to waste his resources to a considerable extent, and reform is much needed. It is surprising, for example, to what an extent small glasshouses and frames are now used by cottagers. In some instances these have been turned to good account, but as a rule the working man and artisan have neither the means nor the skill to utilise such structures advantageously, and they become a dead loss to them, or, at best, a fancy toy. It is obvious that a cottager in possession of a good garden or an allotment cannot do better than turn it to account for the production of those crops that possess a money value to him, whether he sells them or uses them in his own family. It is here where the injudicious character of the prizes offered by cottagers' exhibitions is seen, many, and often the most liberal, prizes being offered for subjects that can only be grown with the aid of glass and other appliances that are not convenient to cottagers, and less encouragement consequently given to the production of those crops that would be most useful. Besides, the expense of seeds, cuttings, and propagation under such circumstances are always considerable. It would hardly be credited how the resources of some local horticultural societies are prostituted in that way. I am acquainted with those which offer prizes for the best flower gardens in a village where the gardens face the street, the object being, of course, to encourage a love of flowers and tidiness—two praiseworthy objects; but the result has not been satisfactory. For years back a few cottagers only have entered for competition, and the way they outvie each other in their efforts to produce the most showy patterns in their small plots—generally filled exclusively with bedding plants—shows that it is not honest rivalry or good gardening that furnishes the motive, and besides, the expense incurred must greatly exceed the value of the prizes. At the same time, the greater portion of the cottagers are virtually excluded from competition, not caring to enter a contest conducted in such a manner.

THE CULTURE OF VEGETABLES AND FLOWERS is so associated, that where the one is there will the other be also; but the main object of providing the labourer with gardens has always been to add to his comfort and means of livelihood, and these ends can be best secured by the culture of such useful vegetables and fruits as can be grown in the open air, and these consist of Potatoes, Cabbages, Brussels Sprouts, Greens, Onions, Peas, Beans, and salads; and of fruits—Strawberries, Currants, Gooseberries, Raspberries, Apples, Pears, Plums, and Cherries. Fruit culture is undoubtedly the weak point of cottage-garden culture in England. It is not understood, and it is a fact that country labourers and working men generally are almost as ill supplied with common fruits as poor

dwellers in towns; because, while the latter may provide himself from the market when he can afford it, the other cannot so readily do so, and, having no supply of his own, he has to go without. The cottager who plants fruit trees and bushes suffers like the others better circumstanced. There are so many varieties to choose from, and he does not know which to have; consequently, his Apples, Pears, &c., are as often as otherwise the wrong variety. That this is so I know from extensive acquaintance with cottage gardens.—S. W., in *Field*.

FUCHSIAS BY THE SEA.

FROM observations which I have made, I am inclined to think that the list of plants that will thrive near the sea is not so restricted as some seem to think. The Fuchsia, for instance, is one of the plants that would not generally be selected for such a situation, except by those who have had opportunities of watching its behaviour. I have seen it on the Somersetshire coast, and I must confess that I was at first somewhat surprised at its luxuriance. It grows in many of the cottage gardens that dip down to the sea. At Watchet I have seen Fuchsias trained to walls to the height of 10 feet, and in the gardens that skirt the coast about Minehead I have seen the best double and single varieties 6 feet and 7 feet high flowering with the greatest freedom, and producing at the same time perfectly-formed and highly-coloured blooms. It must be understood, however, that the locality is favoured by a genial climate during the greater part of the year. Very severe frost is not often experienced there, and everything suffers more from cold piercing winds in the late spring months than from frost in winter. From inquiries I have made on the spot, it appears that the soil of the district suits the Fuchsia admirably without any preparation. It happens that many of the most successful cultivators are cottagers who have not much of either time or money to spare on such subjects, but, having learned from observation how well the Fuchsia thrives, it is cultivated with care, and with the best results.

The plants are obtained from slips inserted in some shady corner at any time during the summer whenever they can be had. They remain through the winter where they are put in as cuttings, and are planted out where they are to stand permanently when the cold winds of spring are over. I have seen such varieties as the Emperor of Brazil, Sir Colin Campbell, Avalanche, Rose of Castile, Mrs. Grant, and Lurline grown into large bushes 3 feet and more in height, after being planted out two years, and I have seen older plants of both double and single varieties 5 feet high in the most perfect health, and surpassing in every respect the best grown pot specimens I have ever seen. One notable plant with a single white corolla which I saw in the same district made an impression on me which I shall not soon forget. It was occupying a snug corner in an angle where two walls met, and its graceful branches were hanging over the wall, laden with flowers in such a way as to strike one with astonishment. What might be accomplished with the Fuchsia as a decorative plant in the open, if undertaken by skilful hands and treated with reasonable care, it is not easy to conjecture. Certain it is that in such favoured spots it is capable of being grown to a very large size. So far as I have seen, there is room for improvement in the selection of varieties. It is not often that cottagers have any choice in such matters—they are glad to get the first that comes in their way; but I think if the Fuchsia was taken in hand by anyone skilled in plant culture, and if more attention was given to the selection of the most hardy and vigorous growers, more would be done with this flower by those who reside in favoured localities, by the sea and elsewhere, than has yet been accomplished. If such hardy sorts were tried as Riccartoni, corallina, globosa, Tower of London, Charming, Lustre, and Reflex, I feel sure they would succeed, especially if given some slight protection in winter. The cottagers to whom I have alluded tell me that they wrap their

plants in pieces of old carpet or bundles of straw on the approach of hard weather; but they do not resort to coverings unless such weather is likely to continue long.

It has often been a matter of surprise to me that this flowering shrub has not been more largely adopted by those who reside on or near the South Devon coast than it is. The climate there offers just the condition it requires. There are many places close by the coast, but yet somewhat sheltered, where even zonal Pelargoniums live out of doors for several consecutive years. It is only when we get a cycle of bad winters that they are killed. If, therefore, zonals are capable of enduring the climate, it is certain that Fuchsias, with their more hardy nature and indifference to being covered up for three or four months during winter, will succeed. The capacity of some of the old hardy Fuchsias to endure frost has not been sufficiently recognised by those favourably situated as to climate. Only a few years ago there stood within a mile of where I write a huge specimen of one of the old sorts, the name of which I never knew; it had bright scarlet sepals and a dark violet corolla. This plant, standing in the open, had reached a height of nearly 10 feet, and was many yards in circumference, with a stem much thicker than my arm. It endured the severe winter of 1870 and 1871, when we registered 26° of frost; but, unfortunately, rude hands have since sadly mutilated its proportions. I mention this to show that, when properly selected, Fuchsias are much harder than they are generally believed to be. J. C. C.

NOTES FROM NEW ENGLAND.

Statice Suwarowi.—I dislike to denounce any new thing, much preferring someone else should do so; but the unpleasant duty must be done, or we should be overrun with useless plants. I was therefore pleased to see your notice of the new annual *Statice Suwarowi* in *THE GARDEN* of July 19 (p. 41). I had it well in flower some four or five weeks ago, having been very carefully sown (only six or eight seeds), and potted on as an expected novelty of real merit; and now to be told it must go to the rubbish heap (with which I quite agree), is a real disappointment. Why, many of the worthless weeds we dig up—for instance, *Prunella vulgaris*, yellow Snapdragon, Golden Rod, &c.—are worth a cartload of it. I am glad to give my opinion of it as I have had it. If there are fine varieties of it, I will take back all I have said.

The Bermuda Lily.—I see my old friend, Mr. Wilson, calls this the Easter Lily. He may be right, but here we call *Lilium candidum* the Easter Lily. Mr. Wilson is always happy in his Lily culture, and his specimen of *L. Harrisii* must have pleased you if you love handsome Lilies, as I do. With me there has been scarcely a day since Christmas that I could not cut from one to twenty of these elegant, large, trumpet-shaped beauties nearly twice as large as longiflorum, and to-day I exhibited five stems, each bearing two of its large flowers. But Mr. Wilson, I fear, is in error in calling it only a "tropically developed form of *L. longiflorum*," though it possibly may be so. In the first place small bulbs no bigger than a Walnut produce at least one immense flower and strong ones from five to twenty. This *L. longiflorum* will not do, or at least never did. Second, it is an entirely different-shaped bulb, being nearly twice as long, largest at the top, tapering to the base; third, it is much more solid than longiflorum; fourth, it has a distinct foliage, which enables me to pick it out of a dozen longiflorums, as I can the bulb very much easier than the old Tulip fanciers could detect a Brabantier worth 3000 guilders from *Semper Augustus* valued at 4600 florins. Fifth, it is not hardy; that it is a native of the Bermudas we can hardly believe, though it may be so, and why should we not consider it so till known to the contrary? A Lily grower of my acquaintance, who passed the winter in Bermuda and dug up and brought home some of these Lilies, says it grows and blooms in the greatest profusion imaginable. One resident had a row of them in his garden,

each side of a walk leading from the street to the front door of his house, 100 yards long, completely filled on each side with them—a mass of bloom quite bewildering.

Lilium Hoveyi.—Sixty pots of this magnificent Lily are now radiant in all the splendour of their regal beauty and flower, 12 inches to 14 inches in diameter, and perfuming the whole atmosphere around or near them with from two to eight blooms on each plant. Six pots of them I exhibited to-day. I wish you could see this group, nearly twice as large as that last year, of which I sent you a photograph.

Early Pears.—Where are your nurserymen that they do not introduce our early Pears? "W." in *Gardening* (August 2) says, "Of really good varieties of early Pears there are but few." Why here we are surfeited with August Pears. Long ago I gathered and sold my Doyenné d'Ete, a small, but most excellent fruit; the Bloodgood came next, and that is gone; now I have already gathered Rostetzer, Manning's Elizabeth, Muskingum, and Osband's Summer, and shall pick just as soon as possible the Dearborn's Seedling, Boston, Clapp's Favourite, Sterling, Julienne, &c., our rule being to have them all gathered by August 25, no matter what the season may be. If left on the trees they become mealy, and lose all their juice and aroma. Boston, when gathered in season, is quite as delicious as the old white Doyenné. Brandywine, as a lover of good Pears once said, was rightly named, for it was "both brandy and wine." Clapp's Favourite, as large as Williams' Bon Chrétien, finer form, with a beautiful red cheek, is one of our best summer Pears, but it does not last a great while; and this reminds me of "W.'s" query, when he says, "What is the use of a Pear if it will only continue a week or a fortnight in good condition after it is first ripe?" A week is long enough, and there are few Pears, except winter sorts, which will keep a fortnight after they are ripe. They will keep, and ought to be kept, from one to two weeks after they are gathered from the tree, which should always be six to fifteen days before they are ripe and ready for the table. But the real value of the early Pears is to have a succession, a new Pear at least every third day from August to November. It is easy enough to do this. It must be admitted that "W." is right when he states good varieties of early Pears "are but few" if he judges only by such poor varieties as Belle de Bruxelles, which was placed on the rejected list years ago. Here is a list of early Pears as they ripen and are taken to market, some of which are unexcelled at any season, and all good:—

	Aug.	Aug.
Doyenné d'Ete ..	.. 1	*Ott. 21
*Bloodgood ..	.. 5	*Osband's Summer .. 21
Manning's Elizabeth ..	.. 6	*Muskingum 23
Bourré Giffard ..	.. 10	*Sterling 24
*Brandywine ..	.. 12	*Moyamensing 25
*Dearborn's Seedling ..	.. 14	*Tyson 26
Julienne ..	.. 15	*Moore's 27
Rostetzer ..	.. 16	St. Menin 28
*Clapp's Favourite ..	.. 18	Baillet 31
*Boston ..	.. 20	

Those marked * are American varieties.

This season is a few days later; I am gathering 30 bushels of Brandywine to-day. Every variety lasts on the average ten days. I can sympathise with my many friends around London at the loss of such delicious vegetables as Sweet Corn, Tomatoes, Lima Beans, Melons, Egg Plants, &c., and Peaches, which can only be produced at large expense under glass, but which we grow here both freely and abundantly; they are as cheap as Potatoes. But I did think you could yourselves raise good early Pears.

C. M. HOVEY.

Lilium auratum a cottager's plant.—Many are under the impression that this beautiful Lily is difficult to cultivate; I therefore give the following in order to encourage anyone who may wish to give it a trial. One of the Royal Dockyard workmen lately asked me to look at one which he had grown in a little brick pit, and so well had it succeeded that his difficulty was to find a place lofty enough for it. A single bulb in a 7-inch pot had sent up two stout flower-spikes,

each of which bore 6 flowers, that measured over 1 foot in diameter and were beautifully marked. It was potted in autumn last year in turf cut from a piece of wild common ground, and left in the cold pit just mentioned, which was merely sufficiently covered to exclude frost. With the lengthening days it began to grow freely, and in addition to a top-dressing of manure it had some weak liquid manure given it once a week. As it got too tall for the only glass structure at command it was set out of doors, and when in bloom was removed indoors, but the scent of twelve expanded blooms was too overpowering for a small cottage, and it was again removed out of doors, where the intense heat soon destroyed its beauty. In a cool conservatory it would have been an ornament for a considerable time, as the leaves on the stem were green right down to the rim of the pot. There is, therefore, nothing to deter amateurs from growing this and other Lilies with success if they only set about it in the right way.—J. GROOM, *Gosport*.

ST. PETERSBURG EXHIBITION.

MR. ELWES, in his report to the Science and Art Department on the International Horticultural Exhibition and Botanical Congress held at St. Petersburg in May last, says: "I was extremely well received, in common with the official representatives of the other great powers, by the Russian authorities, General Greig in particular, the president of the Imperial Horticultural Society, doing all in his power to make our stay in St. Petersburg both agreeable and instructive. I regret to say that Great Britain was absolutely unrepresented at the exhibition, which was noticed by the Czar when he opened it, but I can only attribute this to the difficulty and expense of transporting living plants so far, the restrictions imposed by the Phylloxera Convention, and the commercial failure which I believe attended the English exhibitors at the last similar exhibition. Considering the great difficulties under which horticulture labours in Russia, the exhibition was remarkably good, but I observed nothing calling for particular notice on my part, or likely to affect English horticulture. The Botanical Congress was well attended by some of the most distinguished scientific men in Europe, and held seven meetings at which many subjects of economical and scientific interest were discussed. Nothing, however, took place to make a detailed report from me necessary, as most of the papers read were rather of local or technical than of international interest. With regard to the cultivation of Tea in the Trans-Caucasian provinces, a discussion took place, which made it evident that great efforts are being made by the Russians, which meet with strong support from their Government, to establish this industry on such a scale as to enable them to compete with our important and necessary trade in Indian Tea with Central Asia. It appears to me that this is a subject worthy of the attention of the Indian Government; for, though I was prevented by a severe illness from carrying out my intention of visiting the districts in question this year, yet I have little doubt that the climate and soil in parts of these provinces is thoroughly suitable for Tea growing, and though my experience of this industry in the Himalaya leads me to doubt whether a business requiring so much attention to detail will ever be carried on very successfully in Russia, yet it is obvious that any competition in this trade might seriously injure, if not destroy, the business of Tea planting in the North-west Himalaya, which depends so much on the native demand beyond our frontiers.

A very general feeling was expressed by many of the best known and most distinguished foreign botanists and horticulturists, which I think should be brought under the notice of the Science and Art Department, that an international exhibition and congress of a similar nature should be held in London, and, considering that England, which is decidedly the first nation in the world both in botany and horticulture, has hitherto been one of the most backward in international enterprises in these branches of science, I am not surprised at the expression of this feeling. The

Phylloxera restrictions which have been so harassing to both private and commercial horticultural interests in this country would probably be somewhat relaxed if advantage were taken of such a meeting to prove their general inconvenience and inefficacy. The Royal Horticultural Society, which has been until lately unable to take a lead in this direction on account of their difficulties with the commissioners about their lease of the South Kensington Gardens, would, I feel sure, be ready to devote the entire energy of their council and staff towards the promotion of an international and horticultural exhibition if anything like the same consideration and assistance were given them by the Government as have been given to the promoters of the Fisheries and Health Exhibitions.

RECENT PLANT PORTRAITS.

SEDUM SEMPERVIVUM (Regel's *Gartenflora*, plate 1155).—A good plate of this bright and conspicuous flowered rock plant usually known in this country as *S. sempervivoides*.

ALLIUM SEMENOWI (Regel's *Gartenflora*, plate 1156).—An apparently rather coarse growing Garlic with medium sized bunches of pale yellow flowers.

NARCISSUS, six varieties (Regel's *Gartenflora*, plate 1158).—These portraits of new and pretty varieties of the pseudo-Narcissus section of this favourite flower will be welcome to all growers of Daffodils. The varieties are as follows: 1, *præcox*, medium-sized, single, deep yellow flower; 2, *pallidus præcox*, smaller flower, yellow fringed tube, white perianth; 3, *gracilis*, resembling the last in colour, but with longer and less open tube, and shorter and narrower petalled perianth—both these are very pretty miniature varieties; 4, *King Humbert I.*, medium-sized flower, all yellow, with widely opened tube, mouth edges slightly reflexed, and tube short; 5, *Queen Margherita*, a fully sized flower, with large yellow tube and curiously pointed and folded white perianth sections—these two last named varieties are now being sent out by Messrs. Damman, of Portici, near Naples; 6, *præcox plenus*, a fine, very double, medium sized yellow flower, raised by Dr. Regel.

CATLEYA WHITEI (Regel's *Gartenflora*, plate 1059).—A beautiful Orchid introduced by Mr. Low, with rosy lilac upper petals, and a beautifully fringed purple lip.

KENTIOPSIS MACROCARPA (*Revue Horticole* for August 16).—A graceful growing Palm from New Caledonia, the young leaves of which are brilliantly tinted with salmon-red, an unusual feature in the Palm family. W. E. G.

5233. — **Flowerless Dendrobies**.—When *Dendrobium nobile* refuses to flower and persists in throwing out growths from the tops of the pseudo-bulbs, the treatment must be wrong. Its season of growth commences with the flower buds protruding from the stems. When the young growths are fairly started the plants must be put into heat and be moderately supplied with water. They must also be placed near the glass to be freely exposed to light and air. By the time the flowers open the young growths will have made considerable progress. During the whole period of growth the plants must not get dry at the roots, and they must be kept in a hothouse until the growths are matured; after that remove the plants to a warm greenhouse where they will get quite dry at the roots, scarcely requiring any water during the three months while they are at rest. The above treatment will ensure healthy vigorous plants and abundance of blooms. Keeping the plants too dry at the roots during the growing season, and the atmosphere of the house too moist, is the cause of an over-production of growths from the old pseudo-bulbs. Under the best treatment there will always be a few of such growths. The above cultural directions apply to *D. Wardianum*, *D. crassinode*, *D. Ainsworthi*, *D. heterocarpum*, *D. Falconeri*, and some others.—J. DOUGLAS.

IRIS ORCHIOIDES.

IRIS ORCHIOIDES, of which the accompanying woodcut is not a wholly satisfactory representation, was briefly noticed by Carrière in the *Revue Horticole* some time ago, and I believe that to him is due the name. My friend, M. Max Leichtlin, to whom I am indebted for bulbs of the plant, tells me that it comes from Persia.

It belongs to the Juno section of Irises—i.e., bulbous Irises, with somewhat long, broadish, pointed, lax leaves, and flowers in which the standards, or inner divisions of the perianth, are very small and frequently project horizontally. The so called Persian Iris (*I. persica*) is a well-known form belonging to this division. Another form, *I. caucasica*, especially the handsome variety from Central Asia distributed by Regel as *I. caucasica major*, is also, happily, becoming common. *I. caucasica* varies very much indeed in form, stature, and colour; various specimens of it run through greenish yellow, light yellow, to a rich almost golden hue, and while some are quite dwarf with a single flower nestling in the leaves, some have a stem a foot or nearly so high laden with flowers; and *I. orchoides* at first sight might be mistaken



Iris orchoides.

for one of these varieties, but a little examination shows that it is quite a different plant.

The leaves are narrower, longer, more acuminate, more distinctly folded lengthwise, and more shiny than in *I. caucasica*, and the stem with its lateral flowers is much more distinctly obvious. The flowers, moreover, I believe, are always of a rich golden yellow. But the distinctive features of the plant lie in the form of the falls or outer perianth divisions. In *I. caucasica*, as in *I. persica* and many other Junos, the fall is of a peculiar shape, being extended along each side of the claw as a flange or wing, which very frequently becomes perfectly transparent and silvery. In *I. orchoides* these flanges are wholly absent, so that the fall has an ordinary strap-like form. In *I. caucasica*, a crest (curiously simulating the crest which occurs in the *Evansia* section of Irises, such as *I. cristata*, *tectorum*, &c.) is conspicuous on the claw and a large part of the blade; whereas in *I. orchoides* a similar crest is limited to the blade, being absent on the claw. This crest is surrounded by a greenish purple blotch, which contrasts pleasingly with the soft rich yellow of the rest of the blade of the fall. There are also other minor differences. *I. orchoides* flowers early

in spring, about the same time as *I. caucasica*, and may, I think, be warmly recommended as a welcome addition to our spring bulbs. Its yellow blends well with the bright blue of other spring plants; for example, plants of it or of *I. caucasica* growing near *Chionodoxa Lucilæ* produce a very pleasant effect.

As far as I know, it, like *I. caucasica*, is quite hardy. The latter, I am inclined from experience to believe, prefers a somewhat stiffish loam to the ordinary sandy or peaty soil which is usually recommended for such bulbs, and possibly *I. orchoides* may have similar tendencies.

M. FOSTER.

FLOWER GARDEN.

AUTUMN-SOWN ANNUALS.

I FEEL sure that those who have never grown hardy annuals from autumn-sown seed have not yet realised their worth. There is no comparison between plants that have wholly made their growth in late spring and early summer and such as have gathered strength and obtained firm root-hold by the time the genial sun of spring commences to encourage root action. Godetias with stems as thick as the top of a fishing-rod, *Saponaria* and *Nemophila* covering some 2 square feet of soil, *Clarkia* and *Collinsia* 2 feet high and 18 inches through individually, are what one gets by autumn sowing. I know of few things more handsome and effective than well-grown annuals, grown for their appearance as individual specimens as well as for the effect which they produce in the mass. There are some plants which have no beauty of form worth speaking of—we value them] for their brilliancy or other good qualities—but many hardy annuals combine grace with effectiveness in no small degree, but this is only perceived in the case of well-grown plants. Many do not succeed well with hardy annuals for the simple reason that they delay the sowing until too late a period. This is more especially productive of evil consequences where the soil is of a close, moisture-holding, and therefore cold nature; the young plants have no time to obtain a firm hold of the ground ere winter grips them in a firm and often fatal embrace. If they are not killed outright, they lose that freedom and vigour which they must retain if they are to yield us the full measure of their beauty. The first week in September is quite late enough to sow, and then the position should be sunny, and at the same time swept freely by the autumn breeze, which imparts health and that power of resistance to climatic vicissitudes during the winter months which enables a plant to retain its vital powers intact. Take care that the young plants never become crowded, thin them out to 2 inches or 3 inches apart as soon as they are well in growth and by mid-October they will have developed into fine sturdy little specimens. In a general way it is not practicable to sow where they are to stand, but if they are to be transplanted let it be done, if possible, quite by the second week in October, so that the roots get some hold of the ground by the winter. This is important, as it sometimes happens that hard frosts with drying winds come in November and December and then there is not sufficient root action to keep the foliage full of sap, and the leaves then wither and untimely die away. In heavy soils early transplanting is more necessary than where the natural staple is warm and comparatively dry, though in soils which easily parch in hot weather it is best to get the plants into place as early as possible, as then they do not suffer so much when coming into bloom from periods of heat and drought. It is often said that soil should not be rich for annuals, but if you give them room enough you will scarcely err in this respect, as the more luxuriance the finer in quality and larger in quantity will be the blooms. But a word of caution is necessary; the luxuriance must be under control; there should be but little signs of it before spring, as a too sappy autumn growth invites destruction. A top-dressing of Clay's Fertiliser or of decayed manure early in March will best answer the purpose, as the spring

rains will carry the nourishment down to the roots by the time they most need it. In planting quite 6 inches should be allowed from plant to plant, and if they are to be grown in a mixed border three plants together will be the best arrangement. Although this is a mere question of taste a single well grown specimen looks well, whilst a square yard or more of colour is most effective. *Erysimum Peroffskianum*, for instance, produces an extremely fine effect when massed, the bright orange tint of the flowers being almost unique; whilst such shrubby growing compact-habited kinds as *Godetia Lady Albemarle*, and which clothe themselves abundantly with foliage, do not so much need to be massed in order to display their beauty. One of the finest and most useful of hardy annuals is *Clarkia pulchella*, and those who need cut flowers should grow it largely; the flowers last long in water and the whole appearance of the plant is light and elegant. It is also one of the hardiest kinds in cultivation. Being of much branched habit and rather brittle, it, however, requires some support, as when the plants are large and coming into bloom, rough winds are apt to break off large sprays. Strong twiggy Birch inserted here and there so as to catch the main branches will preserve them intact; there is no need to tie, as the shoots drop into the forks as they grow and there remain. *Collinsia bicolor* also requires support in a similar manner, as do all that grow anything like a foot high and which branch. *Bartonia aurea* is an old annual, but one which has lately become rather popular; it is showy and distinct both in foliage and bloom. *Nemophilas*, blue and white, and *Silene pendula* are well known; but the pretty little *Leptosiphons* are not much grown; they are charming little neat-habited plants with beautiful rosy pink or golden yellow flowers, and only give satisfaction when sown in autumn. J. C. B.

THE BULB PLANTING SEASON.

DAFFODILS.—I believe the demand for these during the present autumn is likely to be something unprecedented, and a few big dealers are said to have practically monopolised the market. The increasing popularity of hardy plants, the Daffodil conference, and the frequent and favourable notices of the *Narcissus* family in the gardening papers have tended to popularise the flower and create the demand, and the result will, no doubt, be that in a few years there will be more Daffodils in our gardens all over the country than ever there were at any previous time in the history of gardening. More fashion and particular crazes in gardening are to be deprecated as a rule, but not much harm is likely to be done by the special advocacy of any particular good hardy flower like the Daffodil, because it is hardly possible to over-plant it in our woods and gardens; and if each good thing was taken up in turn, as the Daffodil has been, our selections of flowers would in a few years be very much improved, lists encumbered with synonyms would be curtailed, and gardeners and everyone else interested in gardening would become familiarised with the best and most useful subjects for furnishing the flower garden. The bedding-out craze was quite a different thing from this. There are so many lovers of hardy flowers, and so many who can grow them in some shape or other, that it is hardly possible to popularise them too much.

THE VARIETIES of the Daffodil, or hardy *Narcissus*, are practically endless, and a full list of sorts, such as is published in the more complete catalogues, would puzzle anyone but an expert in such matters. Hitherto most all respectable seedsmen have confined their lists to a few sorts, but this year, thanks to the Daffodil conference and the information that has been furnished from time to time respecting the best sorts for culture, some lists have been extended, and we have now about thirty sorts enumerated that are sufficiently distinct and promising to merit a place in any collection. The best of these are the double and single *Poet's Narcissus* and its sub-varieties, the common double yellow Daffodil (the best for extensive planting in woods and on

Grass), *N. nanus*, *Horsfieldi*, *maximus*, *bicolor*, *Orange Phoenix*, *biflorus*, *Emperor*, *Empress* (the last two of the finest single kinds, of which the new *Sir Watkin* just coming out at 3s. 6d. per bulb is only a larger variety), *moschatus*, *princeps*, *Bulbocodium* or *Hoop-petticoat*, *obvallaris*, and *cernuus*. The above score or so of sorts are those which by common consent have been picked out from the multitude as most worthy of culture, all being more or less distinct and good.

PLANTING THE BULBS.—October and November are the best months to plant; indeed, it is almost imperative that all spring bulbs should be got in at that season, and as the bulbs can then be selected better than at any other time, there is no reason for delaying planting till later. The first thing is to select the varieties, and as these vary much in price, the apportioning of the amount to be spent is matter of some importance, because a large sum may soon be expended on very few roots. Those who want to plant any breadth of Daffodils for effect would do well to choose the commoner sorts, which are as good as any other for that purpose, and a thousand bulbs go a very little way. The prices for Daffodils range from 24s. per dozen to 30s. per thousand; indeed, Daffodils are reckoned about the best investment of the kind at the present time, and those who possess stock will find them valuable for some time to come. It will be long before some of the better kinds will be either plentiful or cheap. *Emperor Daffodil* is priced now at 24s., *Empress* at 18s. per dozen, and one is never certain of getting either true. Other good sorts run from 5s. to 25s. per hundred. The cheapest sorts are the common double yellow Daffodil, *Sulphur Crown*, single yellow, and the *Pheasant's-eye* (*N. poeticus*), any of which can be bought for about 30s. per thousand. The sorts desired having been procured, the next consideration is where to plant and the culture necessary. In the south, I daresay any of the varieties named bloom freely whether planted in the open or in woods under the shade of trees, so long as the shade is not very dense; but in the north of England and in Scotland none of the sorts will flower freely in cold or shaded positions. They will live and produce leaves, but the bulbs never ripen sufficiently to flower well, and this has been discovered by not a few beginners in Daffodil culture within the last few years whether the position be on an east, west, or south aspect; therefore, see that it is one that will get a good deal of sunlight, particularly for the poeticus section, which with us never blooms in woods where the common double yellow variety flowers pretty well. Further, in order to produce a good effect plant good masses, if fewer masses have to be planted. A hundred bulbs will not do more than plant a square yard well, and they will then be rather thin for a year or two. Thick planting has another advantage, which is that where the Daffodil growth is thick enough to form good tufts, it holds its own against the wild Grasses; whereas isolated bulbs get smothered, and when they do well they take years to form good clumps. These hints will suffice to give planters an idea how far their money and their bulbs will go, and they can arrange accordingly. As to soil, the Daffodil is not particular, as, if other conditions are suitable, it seems to thrive in almost any kind of soil, and where the natural soil is deep enough and good there is no need to add any more. It is of no use planting in wet undrained land, however, but where other trees and plants do moderately well there also will the Daffodil grow. When the soil is poor and shallow the patches of ground should be trenched over, and fresh soil added to give a depth of 18 inches or 2 feet, taking care in trenching such spots that hollows are not selected or places that are likely to become a reservoir for the ground about to drain into, a thing that may easily happen where spots are sunk into the subsoil in the way advised. So far as I have observed, the Daffodil has few enemies. Rats and mice, which devour *Crocus* bulbs, overlook both the Daffodils and Tulips.

CROCUSES.—These associate well with the Daffodils and come into flower earlier, although there are

late and early kinds. As a rule the *Crocus* thrives well on Grass and under partial shade, but the bulbs are apt to be devoured in winter by pheasants, rats, and mice, and rabbits eat the Grass over in spring, while sparrows work sad havoc among the flowers. *Crocuses* are comparatively cheap, however, and to prevent these evils I can only suggest planting plenty of bulbs to insure a display, and trapping and shooting to check the mice and rabbits. The common field mice are most to be feared, and they are always most destructive to new plantations, doing comparatively little damage to established ones. Planting the *Crocus* bulbs 5 inches or 6 inches under the surface, and putting the Grass sod over the soil again when the plantations are on the Grass, is one of the best means of preventing their depredations, as they do not seem to smell the bulbs out then. If shallow-planted and the fresh soil is left exposed, they will unearth every bulb in a week. The common blue *Crocus* of several shades, the white, the yellow, and the striped varieties may be bought from English seedsmen at from 12s. to 15s. per thousand, and are excellent for general planting. The named sorts, which include some extremely fine varieties, are considerably dearer, but the colours are confined in them all to the different shades of blue, yellow, and white, although some colours are very much superior to others. The *Crocus* thrives well in any ordinary soil, and once established will take care of itself, but, as in the case of the Daffodil, the wise plan is to plant good patches in one place and keep the colours distinct. Groups of holes should be dug out, the bottom soil dug over and enriched if needful, and the bulbs should then be set on the surface, placing them an inch or so asunder, and covering them over to the depth already stated.

TULIPS AND SNOWDROPS should be treated in exactly the same way. All thrive well together, but the Tulips should consist of the hardiest single varieties, only in all cases they must be planted thickly and in positions fully exposed to the sunshine some portion of the day. If this is not done the plants will deteriorate and disappear in a few years.

ANEMONE FULGENS.—This fine plant is worthy of a good place in the garden, but it must be planted on the border or in a sunny position on the rockery in order to bloom it well and give its flowers a good chance of opening during sunny days in spring, at which time only is it seen to perfection. Roots should be procured as soon as ready, and be planted without delay in a light, rich soil and in a warm spot, otherwise they are apt to rot during the winter, especially if allowed to shrivel or get in any way too dry before they are planted.

CHIONODOXA LUCILLE.—Although, in my own opinion, this is not such a pretty flower individually as the neglected Siberian Squill, which it closely resembles in general habit, still it increases faster, and is likely to become popular. The bulbs are very small, whereas those of the Squill are large. Warm spots and a light, rich, dry soil suit both of these plants best, and to be effective the bulbs must be set thickly. Patches about 1 foot or 2 feet across look very well either on the border or rockery.

HYACINTHS IN BORDERS.—The single and larger forms do well the first year grown in borders, and no plant produces a brighter or more pleasing effect in early summer, the colours are so rich and varied, but the flowers deteriorate every year afterwards till the bulbs finally die away. They will, however, last and be pretty for three or four years, and those who have old or spare bulbs should not fail to plant them out on their warm borders.

The bulbs which are recommended here, though common in one sense, are not by any means half or a quarter so extensively planted as they ought to be about lawns in gardens, and although there are many other species less known, yet those mentioned are the kinds most easily procured, and which must form the mainstay of any collection

planted out permanently. After these have been established to some extent planters can afterwards extend their collections as they see fit. S. W.

DAFFODIL SIR WATKIN.

SOME discussion having arisen concerning this Daffodil, which, it will be remembered, was first shown at South Kensington under the name of James Dickson and certificated by the floral committee, Mr. Brockbank has given the following account of its origin in the *Manchester City News*: "It belongs," he says, "to the *N. incomparabilis* group, another division of the *Narcissi* than that of *Horsfieldi*, having the crown much shorter than the perianth segments. It is, however, a giant, being quite twice the size of any other of the group. In colour it resembles the grandest of the yellow Daffodils, *N. lorifolius* Emperor, and it might easily be mistaken for it at first sight, the chief differences being in its having a shorter tube and that its chalice is held aloft without drooping. The size of the corolla and the colours of both tube and perianth segments exactly resemble those of *N. Emperor*. It is a singular fact that for sixteen years this grand Daffodil was grown in quiet gardens without any knowledge of its great value, and it comes upon us now as a novelty when there are at least 10,000 bulbs available.

"For this Daffodil we are again indebted to a Whitefield man, Mr. William Pickstone, who, I believe, was born at Whitefield, and was for some years a resident there, and he is still chairman of a manufacturing company in the neighbourhood. Some sixteen years ago Mr. Pickstone was engaged in mining operations in Wales, and purchased property in Merionethshire with this object. When he entered upon his property there, this Daffodil was growing in the garden—a chance seedling indeed, for no one knew how it came there or what was its parentage. This is very different from *N. Horsfieldi*, which was no chance, but a carefully raised seedling. Mr. Pickstone saw its merit, and carefully nursed the founding, and when he shortly afterwards removed to London he took the bulbs with him and grew them in his garden there. Some six years ago he bought an estate at Maesmynan, near Caerwys, in North Wales, and to this place the bulbs were removed. Caerwys is a high-lying valley between Moel Vamma and the sea, and here the Daffodil spread and grew amazingly. The soil was a strong loam and was full of pebbles, and in it the Daffodils appeared to be quite at home. They were to be found in thousands, almost in a wild state, amongst the *Rhododendron* bushes, and even in the woods. The villagers also got odd bulbs, so that the cottage gardens at Caerwys also contained them. It was the same at the place of their origin, so that in Merionethshire they abounded; and yet neither Mr. Peter Barr, the high priest of Daffodils, nor Mr. Burbidge knew anything about this Daffodil.

"Two years ago a dealer in flowers from Shudehill Market was driving past the Maesmynan gardens when he saw the hosts of Daffodils in bloom. Having an eye to business, he sought out the gardener and bought 10s. worth of the blooms, and these shortly appeared in our florists' windows. They proved saleable, and were dealt in during the season. I remember seeing these flowers, but was told it was a new sort, and that the bulbs were not on sale. This year Mr. Pickstone himself came over to sell his blooms, and so many were there that in a single week he delivered over 5000. He next began to talk about selling bulbs, and a Mrs. Mason bought a lot for her own purposes, and she sold a good many more. This was before it was seen that any great value was in them. Mr. Pickstone slowly realised the fact that he held a valuable and unique Daffodil, and before he did so Messrs. James Dickson, of Chester, had sent blooms of it up to the Royal Horticultural Society, named James Dickson. Mr. Pickstone objected, and the plant was re-named by him Sir Watkin, at my suggestion. Messrs. Dickson afterwards bought the stock, and agreed that the name should be Sir Watkin, and there the

matter now stands. There is a great future before this Daffodil, but whether or not it will retain its size, which is its chief merit, remains to be seen. I sometimes fancy that it owes its size to the healthy surroundings of mountain and sea air and kindly soil, and that it will soon relapse under cultivation to the usual size of such *Narcissi*."

HARDY PLANT BORDERS.

ONE of our leading nurserymen in the west of England assured me the other day that at the present time he was selling 500 hardy plants where ten years ago he did not sell fifty; this I thought a significant sign of the times, showing in the plainest possible manner that the taste for hardy plants has taken a strong hold, and that this taste is everywhere extending no one can doubt. I could name several large gardens in which prominent borders in the kitchen garden that a few years ago were planted in the ribbon style are now occupied with hardy bulbs and herbaceous plants, and what is noteworthy, more than one gardener of my acquaintance has had to give up long and useful borders in the kitchen garden in which the choicest early vegetables were grown to make room for hardy flowering plants, a fact which goes a long way to show that ere long our hardy plants will be restored to the position which they once held in our gardens. Herbaceous plants like a sunny position, and they require a soil made fairly rich by the aid of manure and free and deep as well. Some, I know, have no faith in manure for hardy plants, but that is not my experience. Soils differ so much that their requirements cannot be ruled by any hard and fast lines. If crops of Cauliflowers or Onions exhaust the soil in which they have been planted only a few months, it surely stands to reason that there are plenty of herbaceous plants that will in two years exhaust every bit of nutriment contained in the soil in which they are growing. The herbaceous *Phloxes*, *Delphiniums*, *Veronicas*, *Rudbeckias*, *Helianthemums*, *Thalictrums*, *Plantain Lilies*, and *Campanulas* will certainly do this, and many more names might be added of plants equally severe on the soil. I have had sixteen years' experience with two long borders containing a good collection of hardy plants, and although the soil is fairly good, I could no more have kept it in a condition capable of sustaining vigorous and healthy growth than I could grow Pines without the aid of fire-heat. Vigorous-growing hardy plants do not object to a mixture composed of equal parts rotten leaves and farmyard manure applied to their roots about once in two years. As a matter of fact they receive benefit from it. What is wanted in the cultivation of hardy plants is rational treatment. In strong, deep soils plants may do well for several years without assistance, but the time will certainly come when something more than ordinary soil will be required—how soon or in what quantity observation on the spot alone can tell. This much I may confidently say that more than half of the so-called herbaceous borders in the country are deficient in sustaining matter compared with what the plants require. A poor weakly growth and but few and poor flowers are the result, and then the plants and not the cultivator is blamed for their unsatisfactory condition. When we have learnt to deal as liberally with our herbaceous borders as we do with our flower beds occupied with tender plants, then, and then only, can we hope to reach a full measure of success.

IN SELECTING A POSITION for herbaceous plants I think the vegetable borders above alluded to furnish the key to the kind of soil that suits the majority of the plants best. It shows that they like plenty of air, light, and sun, and these conditions should be afforded, unless, indeed, it be possible to have a border in the full sun and another under a shady wall; then, indeed, the cultivator might enjoy a feast of flowers, as the blooming season would be considerably extended. To all, however, who wish to avoid failure I would say do not court the too near shade of large trees. Many plants would be grateful for the shade of their branches, but they cannot thrive under or near large trees, the roots of which suck out the

greater part of the moisture. With reference to herbaceous borders, a good deal has at different times been written against them, the favourite theme being that they have a more or less weedy appearance, and therefore unsuitable for prominent positions. The weediness is, however, quite a question of management. The charms of a herbaceous border consist chiefly in its ever-varying character; therefore there are but few positions for which herbaceous plants are not suitable, provided always that the width is in proportion to the length. Narrow long borders cannot be planted in a satisfactory manner, but if they could, a long border, even if of sufficient width, does not look well unless the surroundings are carried out on the same liberal scale. Specialists in other departments are apt to ignore hardy plants and their capacity to give pleasure. To those who feel an interest in hardy plants, and yet have not a sufficient acquaintance with them to judge fairly of their merits, I would say by all means begin well, preferring selections rather than collections. J. C. C.

EARLY-FLOWERING CHRYSANTHEMUMS.

THIS class of Chrysanthemums has become very popular within the last few years, the great point in their favour being that they make a good display of bloom in the open border just as summer flowers are beginning to wane, and before there is sufficient frost to cut them off. Some sorts, however, flower much earlier than that, it being no uncommon occurrence to have them in bloom during June; but even these can be managed, by varying the time of striking the cuttings, to flower from then to August or September. First on the list stands *Madame C. Desgrange*, a stout, sturdy-growing kind, about a yard high when in the open border, and bearing large flowers, 3 inches or 4 inches across, with reflexed petals, almost Japanese in character. The flowers are white when fully expanded, but on first opening are tinged with greenish yellow. *La Petite Marie* is very dwarf in habit, and flowers profusely when but a few inches high—a character which renders it very suitable for pot culture. The flowers are button-like, pure white, and commence to open about midsummer. *Virginia* is a free-growing kind and very floriferous, both as a pot plant and in the open ground. Its flowers are pure white, and about 2 inches in diameter. Other good white-flowered kinds are *Madame Jolivat*, *Lavallée*, and *Souvenir d'un Ami*; while grown under glass, the flowers of nanum are white, but in the open bush. Another blush-tinted flower, but not so attractive in style as the preceding, is *Illustration* or *Lucinda*, a sort which blooms very early. Among yellows must be mentioned *Precoité*, a deep golden-coloured kind of short and sturdy habit. It is one of the oldest and most desirable in its class. *Henderson* is a good pale yellow tipped with bronze, the little button-like flowers being produced in great profusion. *Le Luxembourg*, or *Mrs. Wood*, is bright amber, and very free, both in growth and blossom. *Frederick Maronnet* is of sturdy habit, and has orange-coloured flowers about an inch and a half in diameter. Selections from other shades of colour would include *Anastasio*, a free-growing, free-flowering kind, with rosy magenta blossoms about a couple of inches across; *Lyon*, bright rosy purple, of good habit, and one of the brightest-coloured flowers we have. *Souvenir de M. Rampont*, a crimson-flowered kind, which soon makes large bushy plants at the most under a yard high; *Pompon Toulousain*, a good dwarf red; *Madame Picoul*, a very early rosy purple-flowered kind, with blossoms about a couple of inches in diameter. A crimson sport from the above (*Mrs. W. Piercy*) is also very desirable. *Cassy*, very early, of sturdy growth, flowers pale pink tipped with a deeper hue. *Pollion*, of stout upright growth, but not more than a couple of feet high, blossoms pale pink. From its sturdy habit no support will be needed, even in exposed situations.

The above include about the pick of the summer flowering kinds; but besides them there

are several that bloom during the early part of the autumn before the regular *Chrysanthemum* season. A few good useful kinds of this class are *Adrastus*, rosy purple, fine for the open border. *Alexandre Dufour*; this variety was last year awarded a certificate by the Royal Horticultural Society, a distinction well merited. It is of the Japanese section, and has long narrow florets of a bright amaranth colour. It begins to flower about the middle of September, and is a very free bloomer. *Felicité*, a stiff habited kind, with large orange-coloured flowers. Inimitable, a free grower, with blooms about an inch and a half in diameter, of a reddish orange colour. *Trevenna*, as represented by its white, rose, and yellow varieties, produces globular blossoms before the bulk of the collection comes in. Several of the Japanese kinds flower early, such as *Lady Selborne*, a good white, and *James Salter*, the variety from which it originated. Again, *Gloire Rayonnante*, a curiously quilled, rose-coloured flower, and the well-known *Elaine* belong to this class. Several of the new Japanese varieties sent from the Continent last season are said to be early-flowering, but I have not yet proved them to be so. That it is possible to prolong the flowering season of the early kinds by striking successional batches was well shown last season, when we had *Madame C. Desgrange* in bloom from the end of July till the ordinary sorts came in. Besides the fact of their flowering when out-of-doors before severe frosts set in, the kinds here enumerated as early autumn bloomers are of sturdy habit, and, as the flowers are not lumpy, heavy rains have little or no effect on them; while large incurved flowers would, under similar conditions, become full of water, droop downwards, and speedily decay. H. P.

White Briony.—It is doubtful if any plant can better illustrate beauty of form than this native climber. A vigorous plant growing wildly amongst the branches of a low-spreading tree, throwing itself into graceful festoons of elegantly divided foliage, is one of the most pleasing objects that one could have in a garden. I lately saw a plant which, growing in the corner of a garden in good ground, had obtained possession of some low bushes, and from them had spread to and obtained more or less mastery of a Plum tree. With the exception of the Hop, when growing under similar circumstances, I never saw anything in the way of a climber either native or exotic that pleased me half so much as this white Briony.—J. C., *Byfleet*.

Single Dahlias.—"I do not care much for single Dahlias," said a friend lately, and if no better colours than those which he had were obtainable, I should think that single kinds are a mistake. They varied from dirty white through dingy yellow to indistinct shades of red, and I would sooner have one good double than the whole batch of them. If seedsmen are not more particular in saving seed from good and distinct colours, taking care that they do not become mixed, single Dahlias will never be popular, and in a few years they will scarcely be seen. I would, however, advise those who have been disappointed with plants raised from seed to try some of the best named kinds, for until the colours are better fixed and the strains in a general way worked up to a higher standard than at present, a great deal of disappointment will be experienced.—J. CORNHILL.

Properties of flowers.—"M. R." in last week's GARDEN is not quite fair to Mr. Glenny, who certainly tried to "improve" upon the previous models of the florists from his own point of view, but he did not invent them. "M. R." is quite as far wrong, too, in asserting that "these absurdities have been by none more heartily repudiated than they have been from the very outset by florists themselves." The latest work on "Hardy Florists' Flowers" was published no farther back than 1880, by one of the foremost of modern florists, viz., Mr. Douglas, who reproduces several of the florists' models and describes others, and I would like to know in what way they differ from Glenny's or any others. Take the "perfect truss" of an *Auricula*

there, for example, and say if either the truss or the flower is not as great an impossibility and example of "intolerable formality" as Glenny or any one else ever conceived. The Tulip is the same, and the general principles laid down for the guidance of florists do not differ in any material respect from those which have guided the fraternity from the beginning. I do not say that Mr. Douglas is responsible for them, but he has reproduced them in his book because I suppose it would have been no florist's guide without them.—S. W.

A good mixed flower bed.—The following is a description of a circular bed on my lawn, which has been more or less gay all summer: In the centre is a large bushy and well-coloured *Acer Negundo* variegatum; this is festooned and draped with *Tropæolum speciosum*. Round the white Maple are a few Lilies, *Spiræa palmata*, *Delphinium formosum*, and mixed *Antirrhinums*. The bed is edged with *Funkia subcordata*. The *Tropæolum* is beginning to open its many hundred bloom buds.—J. H. W. T., *Belmont, Carlo v.*

White-flowered native plant.—Many of the white varieties of our coloured wild flowers are worthy of the cultivator's care. Those I send are *Eupatorium cannabinum* (scarcely open), *Scabiosa arvensis*, a Labiate (*Betonica*, I believe), a Vetch (which has been in bloom all the summer), and *Centaurea Jacea*. Of the latter I have also a pink variety, all found near here. These make good border plants, and to casual observers and the uninitiated pass for exotics. I may remark, and the observation is based on experience, that yellow flowered plants are the rarest to break into white, while the purples are the most frequent.—J. M., *Charmouth, Dorset*.

Lilium tigrinum.—This and its double-flowered variety are now finely in bloom. The blossoms of the double form are smaller and of a much paler colour than those of the type; the plants are not quite so tall, but are very similar in other respects. The flowers open from the centre in successive parts, divided and arranged evenly behind each other, the stamens in different plants showing various states of transition. It is not so showy as the brightly coloured spotted flowers of *L. tigrinum* itself. Fine masses of this Lily may sometimes be seen in cottage gardens where the bulbs are not disturbed, but merely covered with ashes in winter as a little protection against severe weather. Such masses produce strong spikes annually. *L. tigrinum* thrives well in *Rhododendron* beds. A plentiful supply of water at the roots is beneficial both to *L. tigrinum* and *L. auratum* when growing in such situations.—J. G. K.

Primrose and Polyanthus seeds.—The recent spring was not at all favourable to the production of seed of these charming spring flowers, and while the crop is thin, the seeds are somewhat wanting in plumpness and germinating power. It may be assumed that new seeds germinate much more quickly than seeds a year old; therefore it is best to sow seeds as soon after they are ripe as possible. But new seeds germinate irregularly and at intervals. In raising them the best method I find to be this: I fill some broad-mouthed flower pots 6 inches or 7 inches across to half their depth with crocks and rough leaf soil; over these I place a slight layer of Moss, and then fill up with fine light sandy soil to within half-an-inch or little more of the rims, pressing it down as firmly as possible. Then I place the pots in a pail of water, so that the surface soil will be a little above the level of the water, and keep them there until the whole is thoroughly saturated. They are allowed to drain, and then the seeds are scattered thinly over the surface; a little silver sand is sprinkled over them, and all are gently pressed down level. Then the pots are set in saucers half full of water and a piece of glass placed over each. It is rather beneficial than otherwise to have the sun shining full upon the glass, for the surface cannot become dry so long as the pans are kept with water in them. I place

my seed pots on a shelf in the greenhouse, fully exposed to the sunlight and air, and they are never watered on the surface; consequently there is no disturbance of the seeds. It is surprising how soon seeds will germinate when treated in this way; and as soon as the most forward plants are large enough to handle they are taken out and pricked off into store pots and grown on into size. The smaller and later plants have thus more space in which to grow. But let no one be too impatient. Time is required for all the seeds to germinate, and if they are good they will do this sooner or later.—R. D.

GARDEN FLORA.

PLATE 455.

DIANTHUS ALPINUS AND ERODIUM MACRADENUM.*

IN no class of plants is correct nomenclature more needed than in that of Pinks. I have been told that out of fifty-seven distinct names under which plants or seeds of *Dianthus*es were received fifty-five turned out to be *D. plumarius*, or some of its many forms, the other two being varieties of *D. deltoideus*, a state of things which goes on from year to year with little or no improvement. In the "Genera Plantarum," the latest standard authority, as many as seventy are considered to be distinct, but published elsewhere there are names for double and even treble that number. The number of really good alpine Pinks may, however, safely be set down as not exceeding a dozen, and probably not more than half of these are in cultivation, i.e., excluding the tall and straggly section, of which *D. plumarius* may be taken as the type, and the Sweet William section, represented by *D. barbatus* and *D. capitatus*. With most of the alpine Pinks a tolerable amount of success may be obtained by planting them in open beds or borders in ordinary garden soil, provided a good supply of small stones and lime rubbish be placed round the necks of the plants. This plan does not, however, answer satisfactorily for more than two or three years without renewal; therefore, if a rockery be not available, small mounds of soil should be formed and furnished with large and small stones, placed so as to suit the individual requirements of the plants. In preparing places for them on the rockery, it will be well to bear in mind that a damp soil, if not too retentive, exactly suits them. Clear the pocket out to 9 inches or a foot, make the bottom firm, and lay down flat stones inclined a little to one side, and fill up with the already prepared soil. The mixture generally used is black peat, fine loam, and coarse river sand in equal parts, with a good admixture of old mortar and small pieces of limestone or granite.

THE ALPINE PINK (*D. alpinus*), of which an illustration is given in the annexed plate, is undoubtedly the most charming amongst dwarf kinds in this section. It likes sunny and exposed situations, which should always be chosen for it, and it should also have a good depth of prepared soil and plenty of moisture, at least where the drainage is good. When well grown and flowered nothing can exceed its beauty; indeed in its best state the leaves are quite hidden under the flowers. It is easily recognised at a glance from all others by its dark shining green foliage and more or less prostrate habit of growth; seldom even under the most favourable circumstances does it exceed 3 inches in height, and each stem

* Drawn in Messrs. Backhouse's nursery at York by the late Mr. Noel Humphreys.



bears only one flower, which is always over an inch in diameter, and of a fine deep rose or purplish pink, regularly spotted with crimson, a darker tint forming a ring round the bearded eye; the petals have also beautifully crenated margins. It is a native of the high mountains of Austria, and flowers with us in June and July.

D. NEGLECTUS is a handsome dwarf species, of rare merit as a plant for rockwork. It is not nearly so fastidious as regards requirements as *D. alpinus*, and is much easier established either in pots or on rockwork. Another plant found in gardens under the name of *D. Fischeri* is nothing more than a variety of *D. neglectus*, differing in having constantly from two to three flowers in a head even in a diminutive state. It is totally distinct from the *D. Fischeri* figured in Sweet's "Flower Garden," t. 245. That kind grows over a foot high, has a many-flowered stem, and is nearly related to *D. superbus*. *D. neglectus*, true, only grows 3 inches

June and July, and is a native of the mountains of Provence and Dauphiny.

THE CHEDDAR OR MOUNTAIN PINK (*D. cæsius*), although a native, being found on limestone rocks in Somersetshire, and also on old walls near Oxford, does not meet with the amount of favour which it deserves as a garden plant. It forms close, compact tufts of densely glaucous leaves, and seems to be specially adapted for the embellishment of old and unsightly walls, as, unlike the others, it is very impatient of damp, and does not succeed well in the mixed border, except in dry, gravelly soils.

There are many varieties of *D. cæsius* in cultivation, notably the Oxford Pink, which has handsome rose-coloured flowers an inch in diameter, and a large-flowered variety called *grandiflora*, having very large flowers of a delicate rose colour and very fragrant, produced in June and July. Amongst those of note not in cultivation, *D.*

which they ripen freely, should be resorted to, using much the same soil in which to sow them as that just recommended.

GLANDULAR HERON'S-BILL (*E. macradenum*) of which an illustration is given on the annexed plate, although introduced to this country more than a century ago, is still comparatively rare. It is very remarkable for the exceptional length and curious formation of its roots; consequently it requires a rather deep, well drained soil and a sunny exposed position on the rockery. It has a tufty habit of growth, the leaves being crowded on the top of the roots and spreading star fashion; they are densely covered with a fine glandular pubescence, are oval in outline, and gracefully cut into segments. The flowers are produced in straggly umbels, from three to six in each, nearly an inch in diameter; the two upper petals are bright purple with deep blackish purple horse-shoe shaped spots and prettily branched veins, the three lower being purple or flesh coloured. It grows about 6 inches in height, and flowers in June and July. It is a native of Spain and the Pyrenees.

ROCK HERON'S-BILL (*E. petraum*) is a very handsome, almost stemless, species, eminently suited for placing on old ruins or rough stones on the rockery. It seldom attains more than 3 inches or 4 inches in height, and although the flowers, which are purple with darker blotches on the two upper petals, are not handsome, it fully makes up for this by means of its smooth, finely-cut leaves. It flowers early in June and July, and is a native of the Pyrenees.

MAIDEN-HAIR HERON'S-BILL (*E. trichomanifolium*), although resembling the above in general appearance, differs widely from it in having hairy and slightly glandular leaves. This species grows fairly well in the ordinary border raised on stones, on which it forms dense cushiony tufts. The flowers are flesh-coloured, marked with dark purple lines. It is a native of Mount Lebanon, and flowers in July. *E. cheilanthifolium* is another name under which this plant is known in gardens.

REICHARD'S HERON'S-BILL (*E. Reichardi*) is a well-known plant, but unfortunately it does not stand our severe damp winters in the open air very well, unless in very dry sheltered positions. It forms small circular tufts of shining green kidney-shaped leaves radiating outwards from the centre. The flowers are small, pure white, faintly streaked with purple veins, and very handsome. It is a native of Majorca and flowers all through the summer.

E. COMPOSANUM AND *E. ASTRAGALOIDES* are pretty dwarf species, having fine densely woolly leaves like those of a small *Astragalus* and large tuberous roots. D. K.

Depredations of slugs.—The extent of the ravages committed by slugs on various kinds of garden crops in a short time, and the distance such small and slow-travelling creatures will crawl backwards and forwards during a single night, is surprising. Slugs are credited with harbouring about Box and other walk edgings, which they do, but there are some plants they do not like to shelter near, and one of these is the Ivy. For a good many years the kitchen garden walks here have been edged with *Hedera maculata*, a strong growing variegated sort, which is clipped in periodically, making one of the best and prettiest edgings I know, never failing like Box, and requiring much less care. Since these edgings were laid down slugs have been completely banished from the walk edges, though no more likely place for their haunts could be imagined, because the Ivy is warm and close summer and winter but,



Erodium petraeum.

or 4 inches high. It forms dense tufts of wiry Grass-like leaves slightly glaucous, and about an inch long. The flowers, which are brilliant deep rose, are scarcely an inch across, slightly serrated, and very handsome. It is a native of lofty positions in the Alps, and flowers in May and June.

THE GLACIER OR ICY PINK (*D. glacialis*) is nearly related to *D. neglectus*, and is one of the most difficult of its class to get well established. A situation in which *Campanula cenisia* will flourish seems to be that which is the most suitable for this Pink, viz., on a ledge or flat stone in the vicinity of a small stream where it is never allowed to get dry. The stems are erect, tufted, and generally one-flowered; the leaves are very narrow and bright green, and the small, prettily serrated purple flowers are lovely when produced in quantity, but that is rare. Although this Pink may be increased by division, great risk is incurred in disturbing it when once it gets established. Seeds, which will have to be imported, as they rarely ripen well with us, are best sown where they are intended to remain; the same, indeed, may be said of all the alpine Pinks. It flowers in

pumilus and *D. elegans*, a pure white-flowered species about 3 inches high and much in the way of *D. glacialis*, may be mentioned.

The different species belonging to the genus *Erodium* (Stork's-bills or Heron's-bills, as they are called), although not generally distinguished for brilliancy in the way of flowers, form one of the most interesting sections of this justly popular family. On rockeries the delicately cut Fern-like leaves of the stemless section are shown off to advantage, and when once fairly established, the attention otherwise required in their cultivation is reduced to a minimum. Old buildings, however, or imitation walls in the rock garden are their favourite positions, their low, dense, spreading habit of growth rendering them unfit for moist situations. They never, indeed, seem to be more at home than when clinging to crumbling stones. Where soil is used for them it should be of a very porous character, lime rubble, small stones, and coarse sand constituting the main ingredients. They are increased with comparative ease by means of cuttings or division, but as they are very slow growers, seeds,

strange to say, the tenderest plants escaped the ravages of slugs everywhere near it, while on the opposite side of some of the borders, where a mulching of loose litter is spread over the roots of fruit trees, they eat Lettuces, Turnips, Kidney Beans, &c., straight before them, returning afterwards to the shelter of the litter; but on the side next the Ivy, some times only a few feet off, they never harm anything. This has been going on for years. Slugs were destructive this spring, owing probably to the mild winter, and our early Turnips have been destroyed the whole length of the border on the side next a mulching of litter laid over Vine roots, while next the Ivy and in contact with it no damage has been done. Grass edgings are amongst the worst for harbouring slugs, and have no business in kitchen gardens or near tender crops, and loose leaves or litter are even worse. The best preventives are frequent digging and trenching of the ground and stirring of the surface. Dry sawdust sprinkled round plants will keep slugs off as long as it is loose and dry, when they cannot crawl over it, but when battered down by rain it is useless. Lime dustings early in the morning and late in the evening will destroy many of the pests. I have often thought select subjects might be protected from slugs by being dusted over with flowers of sulphur, which keeps birds and mice from eating the leaves and seeds. I have not yet tried it for slugs, but mean to use it on Stocks and Asters this season, if required.—S.

Wasps' nests.—I have never before seen so many wasps as I have this year. I have already destroyed sixteen nests in the neighbourhood of my garden within an area of twenty acres. I find Watts' Asphyxiator a capital exterminator. Charge the burner with sulphur paper, light it, and put the end of the tube into the hole; turn the handle for about a minute, then enclose the smoke, and all will be killed. Another very simple remedy where it can be applied is as follows: Pour about a pint of gas tar into the hole at night and cover up with a sod of turf; thus treated they will give no further trouble. There are, doubtless, other ways of getting rid of these pests, but I think both of these easier and safer than the old plan of digging out and burning, or the gunpowder and brimstone equib.—T. MOBSY, *Yate House, Chip-ping Sodbury, Gloucestershire.*

SEASONABLE WORK.

FLOWER GARDEN.

THYME.—Though strictly speaking all the plants belonging to this genus are herbs, there are several of the varieties which for use in the flower garden cannot be excelled by any other plant of similar habit and hardiness. *T. coccineus*, *hirsutus*, *tomentosus*, *Serpyllum*, and *lanuginosus* make good rockwork plants, and the two last-named kinds will flourish in the driest positions. The gold and silver variegated varieties are generally used for edgings in summer bedding, and when kept trim by frequent cutting they are excellent plants for the purpose, but a far better use may be made of them as well as of the common green variety, and that is as edgings and groundworks in winter bedding arrangements. The density of their root formation is favourable to their transplantation at almost any season; indeed, we have on many occasions at the height of summer made good with these a failure in summer bedding plants, and as our beds have all to be as fully furnished in the winter as in summer, there was so much the less to be done when the general clearance and replanting began. Seedlings of the common green kind make the best plants. Sow in pans in March, transplant to the open borders early in May, and the plants will be ready for the following winter. The variegated kinds can only be had from cuttings, which strike well at any season under handlights or in cold frames. The kinds for rockwork are increased by division in autumn or early in spring.

SUB-TROPICAL AND FINE FOLIAGED BEDS.—Besides tying to supports as a prevention against injury from wind and heavy rain-storms, and the removal of leaves and shoots that over-

hang the turf to its injury, there is little else needed just now in this department. Growth of late has been profuse, and the beds will never be better; hence the present is the time to take note of what to repeat or what to avoid in future arrangements. We have marked the following for repetition, viz., a bed of tall Sunflowers and Castor-oils in combination; one of single Dahlias, Marguerites, and *Acacia lophantha*; and another of *Solanum robustum* and *marginatum* (a row of each), with *Eucalyptus* and tall *Cannas* in the centre. The variegated *Abutilon* and crimson-stemmed *Chilian Beet* in combination are also very pretty. Amongst the fine dwarfed foliaged plants succulents at present bear the palm. *Sempervivum arboreum*, *arboreum purpureum*, and *arboreum variegatum*, large-leaved *Echeverias*, and American *Agaves* are the principal large kinds used, the carpeting plants for the same being *Mesembryanthemum cordifolium variegatum*, *conspicuum*, and *cærulescens*; all the attention that these beds now need is to keep them free from weeds. Pick the seed-pods off the *Mesembryanthemums*, and give an occasional press down with the hand to keep the growth right under the taller plants.

HERBACEOUS PLANT BORDERS.—Now, whilst herbaceous plants are in flower, is the time to weed out all worthless or spurious species, and replace them by increasing the stock of such kinds as not only make the best show in the open borders, but are most useful in a cut state. The *Achilleas*, Japanese *Anemones*, *Phloxes*, *Galegas*, *Actæas*, *Potentillas*, *Pentstemons*, and *Poppies* are at the present time in grand blossom; they have had about the same amount of attention as to watering, picking over, and tying up as has been given to ordinary bedded-out plants. Both sections are valuable in their respective places, but neither one nor the other will make a creditable display if left to take care of themselves; and yet many people appear to think so, more especially in respect of herbaceous plants. Many of the kinds may now be propagated freely by means of offsets, and *Phloxes* and *Pentstemons* by cuttings, but those that need to be increased by division must be left until later in the year. Keep the borders free from weeds, trailers well to their supports, seed-pods picked off *Sweet Peas*, and if there are any vacant spots, sow hardy annuals for early spring flowering.

GENERAL WORK.—Water shrubs, *Roses*, and climbers on walls that rain cannot reach. In the case of these a good wash with the hose or garden engine is also desirable. Clip *Privet* and *Yew* hedges, and give a final trimming for this season to *Box* edgings. Propagate bedding plants at every opportunity, and also prepare spring flowering plants by pricking off seedlings, splitting up *Polyanthuses*, *Primroses*, *Forget-me-nots*, and similar material.

INDOOR PLANTS.

CAMELLIAS.—These are better under glass than in the open air after their buds are set; but, nevertheless, turning them out frequently becomes a necessity with plants that bloom early, and which have made their growth correspondingly early, otherwise there is often danger of their blooming sooner than may be wanted, unless there happens to be a house with a north aspect at command, where, by throwing it open, they may be kept as cool as out-of-doors. Treated in this way, there is much less danger of their getting dry at the roots than when set outside. The injurious effect that over-dry treatment at the roots has on these plants is proportionate to the more or less advanced stage the flower-buds are in. If only about setting, or little more, a dry condition of the soil does little or no harm; in fact, with vigorous examples, it is frequently necessary to allow them to get dry with a view to insuring their setting flower-buds in place of making second growth. But where the buds have attained any size, if allowed to get too dry, more or less falling is all but sure to follow, although it may not take place for as much as a couple of months or more after the soil has been so dried. Plants

in the open air should have particular attention whilst the weather is dry in the matter of water, to avoid the consequences here pointed out. *Camellias*, if fairly treated, grow better than most plants even in the vicinity of smoky towns; but there is one evil connected with their cultivation in such localities, and that is that dense foggy weather in winter frequently causes the bloom buds to drop in quantity, especially those of the white kinds that are deservedly so much prized. Many of the semi-double or irregular-formed flowers are much better able to resist injury in the way described, and on that account are more suitable for growing in places so affected. We have also noticed that the buds are much more likely to drop from the cause named when late, through not being sufficiently advanced in the autumn; consequently, although it is desirable to have as much succession as regards the time of flowering as circumstances will permit, it is better in such neighbourhoods to get them well forward in the summer and autumn for early blooming than to attempt, as is often done, to keep the greater portion for flowering in February or March. Wherever these plants are under-potted, and the foliage, through being deficient in deep green colour, exhibits want of sufficient sustenance, manure water ought to be given. Whatever enriching material is used in this way, a liberal amount of soot should be included; even soot water alone is one of the best things that can be given under such conditions. Not only have *Camellias* a special liking for soot, but it likewise benefits them by ridding the soil from the presence of worms.

AZALEAS.—Like *Camellias*, these plants may be had in bloom during much the greater portion of the year if a sufficient stock is at command and they are properly treated. At no time are their flowers more useful for cutting or the ordinary purposes of decoration than through the last two months of the year, when such flowers as are forthcoming under glass have to be wholly depended on. But though *Azaleas* bear forcing much better than most plants, it is far the best to regulate their time of blooming by the length of time they are kept warm under glass after the season's growth is completed and the buds are set. Where wanted to come up in about the time mentioned, the buds can scarcely be too large and prominent before they are taken out of heat; but, in speaking of heat, through the summer months no more is required than keeping them in a house where the sun's rays are made use of by not giving too much air through the day, and shutting it off completely early in the afternoon. Plants so treated until the buds are as large and prominent as those of *Camellias* in their early stages can later on when required be induced to open their flowers with half the heat and in half the time that is necessary when turned out of doors or put in cool quarters under glass before, or as soon as the flowers have set. Where *Azaleas* are required to bloom early, and to be freely used for cutting, the old white kind and *Fielder's White*, a slight improvement on the former, should find a place, for though some of the newer sorts have better formed flowers, still the much longer and more vigorous shoots which the old varieties named make, permit of the flowers being cut with a correspondingly greater length of wood attached, a matter of great importance in cut flowers. Such examples as were kept for blooming late, say up to June or July, will only now be making their growth, and to do them justice should for eight or ten weeks yet be subject to warm treatment, otherwise many of the shoots will never set flowers at all, or be so insufficiently developed as to go blind through the winter. In most cases where this latter mishap occurs it is directly traceable to the buds not being sufficiently formed before the cessation of growth. The whole stock of *Azaleas* should be frequently examined to see that they are free from their greatest enemy, thrips, also red spider, which latter sometimes makes its appearance through a deficient use of the syringe, in not getting the water well to the under-sides of the leaves. Dipping and washing with Tobacco water involves much more labour

than fumigation, but it is far more effectual for the destruction of the thrips, and, what is of quite as much importance, it does not injure the leaves, which fumigation often does. Where red spider as well as thrips exist it is only necessary to add two or three ounces of Gishurst per gallon of the Tobacco water, which will destroy the spider; that Tobacco water alone seldom does effectually. Azaleas in all their stages require to be much more liberally supplied with water at the root than almost any other genera of fine-rooted hard-wooded plants. They enjoy a moist condition of the soil, such as would kill the small feeding fibres of most hard-wooded greenhouse subjects.

PIMELEAS.—These distinct and beautiful plants are quite as suitable for greenhouse decoration as they are for the purpose for which they are usually grown—to exhibit—or even more so; for so free is their natural disposition to flower, that they bloom profusely when no larger than occupying 7-inch or 8-inch pots. Another matter of importance when for ordinary use is that they require next to no artificial training or the use of numerous sticks and ties, as if sufficiently cut back each season after blooming, they will all but support themselves without sticks. The elegant drooping habit of the flower-shoots bearing their distinct heads of bloom makes them contrast well with most other plants. The principal cause of their not being more generally grown we take to be the unsatisfactory condition they usually get into through the ravages of red spider, which in the summer months is almost sure to attack them if means are not taken to keep the pest down. Regular drenching daily with the syringe is indispensable to keep the plants clean; not simply sprinkling them, but getting the water in quantity to the undersides of the leaves. Ordinary attention in the other matters of potting, air-giving, and general treatment, such as found to answer for other hard-wooded greenhouse stock, is all Pimeleas require, with the addition of much more water to the roots in the growing season than will suffice for others of a hard-wooded character. Being mostly spring flowerers, Pimeleas whilst young often get their potting deferred through a supposition that it will interfere with their blooming. Where such has been the case, and they are at all under-potted, they should at once have a shift, for if kept too long cramped at the roots, they get into a stunted condition, which stops their future progress.

PREPARATION FOR WINTER.—Whatever has to be done in the way of repairs to plant houses, re-adjustment of heating apparatus, painting, and other things of like nature, this is the best time in the whole year for carrying it out, as now, whilst a good many plants are undergoing their hardening process in the open air, the different structures may, by exercising a little judgement, be cleared in succession, so as to admit of the necessary work being done, which it can be so much better and expeditiously than when the houses are encumbered with occupants. Where the woodwork can be well dried, such as permitted of when the houses are cleared, painting is more preservative in its effects than when done, as often seen, with the wood in a half saturated condition, in which state it is of little use. The advantage of doing such work at this season in place of deferring it until autumn or spring, as frequently happens, cannot be over-rated.

FRUIT.

PINES.—Although we have had a short period of hot weather, the season is not much in advance of last year, and Pines, owing to the slow progress they made through the cold spring months, are still rather backward. To make up for lost time, plants intended for early planting next spring should now receive every encouragement in the way of heat, moisture and stimulating food, consisting of weak guano water, or diluted liquid from the manure tank. When the pots are well filled with roots, and days decrease in length, root-watering must be more carefully performed, atmospheric moisture may be decreased, and a

liberal supply of warm air must be kept constantly playing amongst the foliage, in order to secure perfect maturation of the plants without producing a sudden check. Let the heat for the present range from 70° at night to 85° or 90° by day. Give air on fine mornings at 80°, and run up to 95° after closing. A bottom heat of 85° to 95° suits Pines in all stages of growth. Some growers like a much higher figure, but the little they gain in time is lost in weight. Smooth Cayennes, Jamaica, and that excellent winter kind, Lord Carington, now swelling off for winter use, if kept close to the glass to prevent the crowns from becoming too large, cannot easily be overdone with solar heat, stimulating food, and moisture. Avoid fire-heat as much as possible by running down the blinds, or covering with mats, on cold, chilly nights. Remove ripening fruit to a dry, warm atmosphere to finish. Take off strong suckers, pot, water, and plunge at once, and shift any that are well rooted from 8-inch to 10-inch or 11-inch pots.

VINES.—Houses of late Grapes intended for keeping through the winter will now require liberal ventilation, with gentle fire-heat, in order to secure the perfect maturation of fruit and wood by the end of September. Reduce strong laterals where they have been allowed to run to a considerable length, but at the same time guard against exposing the bunches to the sun, as black Grapes always colour best under a good canopy of healthy foliage. Black Morocco and Madresfield Court Muscat, two varieties liable to crack if heavily watered or allowed to hang in a damp, stagnant atmosphere, should be heavily mulched to prevent the escape of moisture from the borders. An impression prevails with some growers that their success this season is entirely owing to the extension of laterals, but several fine examples of this noble Grape having come under our notice, we have found upon enquiry that they have been grown upon the close-stopping principle—a fair proof that the secret of success must be sought for in the management of the roots and the maintenance of a circulation of dry, warm air. Muscats, now quite ripe, must be closely watched, and, if necessary, slightly shaded with Haythorn's hexagon netting through the hottest part of the day. If the roots are in external borders, some kind of covering should be held in readiness for throwing off heavy falls of rain. Gradually reduce the temperature of the house, using no more fire heat than is absolutely necessary to prevent the berries from damping, and ventilate freely on fine days. Follow up the lighting and relaying of the roots of early and mid-season Vines before the leaves fall. Keep them well up to the surface and encourage the formation of new spongioles, by syringing and shutting up with sun heat on fine afternoons. In cold, unfavourable situations, Vines should always have the run of internal, as well as external, borders, which should be well concreted and drained. Use new turf, with an admixture of old lime rubble, crushed bones, and burnt earth. Apply manure as a mulching in preference to mixing it with the compost, and aim at narrow borders well filled with roots, which can be easily protected or excited, as circumstances may dictate, always bearing in mind that Grapes invariably set and colour best when the latter are under the control of the cultivator.

CUCUMBERS.—Plants raised from seeds or cuttings early in the current month will be growing fast, but they must not be stopped until they have covered three-fourths of the trellis, neither must they be allowed to carry fruit until they are thoroughly established in the pots or hills. If the latter, keep adding fresh turf and old lime rubble as the roots show through the sides, and use nothing but pure water for watering or filling the evaporating pans for the present. Also avoid the use of fire-heat by keeping the fermenting bed frequently renovated, and by closing about 3 p.m. with sun-heat and moisture. Where several compartments now occupied with Melons have to be planted with Cucumbers, two sowings should be made in August and one in September, the first to succeed the summer frames, the last to be kept

clear of male and female blossoms until the end of the year, when they will be in a fit state for fruiting through the succeeding spring and summer. Old plants in full bearing must be liberally supplied with warm liquid at every watering, and the quantity of fruit they are allowed to carry must be regulated by the quality of that which they are now producing. Pay particular attention to the bottom-heat, as it is to neglect of this important point that many ills, including canker and mildew, may be traced.

STRAWBERRIES.—By this time the latest plants will have become well established in their fruiting pots, and the most important point will be the formation of plump ripe crowns with plenty of healthy roots under them for forcing up the flower-stems in the spring. In low, damp situations, more favourable to the growth than to the ripening of the crowns, medium-sized pots, which quickly become filled with roots, answer best, and when this stage has been reached, it is a good plan to elevate them on planks, dwarf walls, or platforms, 1 foot or more above the ground, where by full exposure to light and air, and careful attention to watering with water which has been for some time exposed to the influence of the atmosphere, the most backward plants may be made fit for storing away in cold pits by the end of October. Keep the general stock of plants free from weeds and runners, and move them occasionally to prevent the crook roots from striking into the ground; also keep a sharp look-out for worms, red spider, and mildew. The best remedy for the removal of the first is clear lime water, and the others may be destroyed by dipping the leaves of the plants in a mixture of sulphur and water. If very early forcing is contemplated, the first batch of Vicomtesse Héricart de Thury and La Grosse Sucrée, which is equally early and produces finer fruit, may now be taken to an open, airy situation where they can be partially plunged for the better protection of the roots, which should now be almost forcing the balls out of the small pots, as well as to economise time in watering. If not already done, get the surplus runners planted out on good ground conveniently situated for water. Mulch and encourage a vigorous growth, as these plants will give the earliest runners for next year's forcing.

KITCHEN GARDEN.

RAIN is now much needed in the kitchen garden in order to make things look cheerful and bright. Coleworts and Broccoli now cover the ground with foliage; one more hoeing will be sufficient to carry them through the season. Onions in some places are somewhat mildewed; we are therefore taking them up, leaving them on clean land to dry. Immediately the land is clear we set the line, and begin to plant Cabbage without any digging; when the young plants get fairly started, we give the soil a good stir up with a cultivator, which does a great deal of good. Lettuces, which we require in large quantities, we plant between the young Strawberry plantations, for both Strawberries and Lettuces enjoy a good rich larder. Endive is now getting ready for putting in its proper place. Keep sowing winter Lettuces and Spinach, cut all the old flowering stems from Globe Artichokes, and if the autumn is a fine one a second crop of smaller, but quite as good, flavoured heads will be the result. General kitchen garden work will consist in eradicating all seeding weeds. There is no time when a good salad is relished more than just now. Our Paris Cos Lettuces growing between Celery ridges, manured with old Mushroom manure, are simply unique. They want no tying, are crisp and cool, and most refreshing.

Variegated Bindweed.—Does a variegated form of the common Bindweed exist? We have just found a beautifully variegated plant, each leaf of which is reticulated with yellow in the most regular and charming manner, very much in the way of the golden variegated Honeysuckle. If it keeps true, a thriving plant would look very pretty, but of course it would have to be

confined to a pot on account of its wide-spreading and encroaching nature.—J. C. B.

GARDEN IN THE HOUSE.

PLANTS FOR TABLE DECORATION.

EVERY year the demand for these seems to become greater and greater, as in all households where there is any pretension to refinement a plant of some sort is sure to be seen on both breakfast and dinner table; and it is fortunate there are so many varieties suited to the purpose to give change, or people who have to grow and prepare them would be put to great straits. Among plants fit for this purpose none are better than the smaller growing narrow-leaved *Dracenas*, the colour of which renders them specially valuable, as being so bright they show up in most pleasing contrast with their surroundings. My favourite is *D. Cooperi*, which, besides having very brilliant foliage, is remarkably graceful in habit. Another kind very suitable for the same kind of work is *D. terminalis stricta*, an improvement on the normal form, as it has all its good qualities and is more highly coloured. *D. nigra rubra* is a narrow-leaved, very elegant kind, that should be largely grown for table decoration, as, being of rather spare habit, it does not obstruct the view like others that are more dense, and its dark ground and red veining contrast strikingly with some of the *Crotons*. The way to get well-feathered specimens of *Dracenas* with high colouration is to strike the heads of old plants, which may be done with safety and certainty by making use of small flower-pots. These should be split in halves, when, by placing one portion on one side of the stem and the remaining part on the other, they may be tied and kept together again as if whole, and then filled with sharp sandy soil, in which roots are speedily formed. To encourage the stem to do this, the old leaves should all be cleared away at that particular part, and the soil kept constantly moist by frequent syringing or watering, which, after a time, will have the desired effect; as soon as it can be seen that the top part of the plant is established independent of the bottom, the head may be cut away just below the pot, and at once shifted on into another a size or two larger. Another plan of striking the tops of old *Dracenas* is to bind a large handful of common Moss or Sphagnum round the stems instead of using pots, and if the Moss or Sphagnum is kept wet, roots will strike into it. I have also seen the heads do exceedingly well cut off and stuck in bottles of water, and then stood in a close propagating box, where, if the atmosphere is moist, the leaves keep quite fresh, and rootlets are soon emitted. After the heads are removed, the stems will break quickly and form young shoots, which may be taken off with a heel, and if potted and kept close for a time, they will strike and make nice little plants. Where it is desired to increase the stock rapidly, the stems may be cut up into inch long pieces and buried in sand, and if then subjected to a brisk heat, the eyes soon start into growth. The large fleshy roots may also be made use of, as they, too, are full of eyes, break into growth just as readily as the stems, and form equally good plants.

CROTONS make choice plants for table decoration, the light, narrow-leaved, pendulous kinds being best. *C. angustifolium* is a remarkably graceful kind, the leaves being very narrow, long, and drooping, and when well grown the plants put on a great deal of colour. Another variety that is as curious as it is beautiful is *C. spirale*, which has a singular and regular twist of the foliage, thus giving it the form of a corkscrew, and as the leaves are highly coloured, the effect which they produce is most charming. *C. interruptum* is also a noteworthy kind, the peculiarity of this being the interruption of the leaf-blade, which has gaps or vacant spaces an inch or more long where is to be seen only the midrib. *C. majesticum* is a superb variety, having leaves about a foot long, and from half an inch to three-quarters of an inch wide, which in the young state shows a good deal of yellow, and this after a time gives place to or be-

comes suffused with a very rich crimson. *C. Weissmanni* is likewise a most desirable kind, as, though it does not take on the bright colours of those referred to, it has beautifully veined leaves, and the midrib is clear yellow. *C. Queen Victoria* is also a fine variety, having foliage 2 inches or so wide and from 1 foot to 18 inches long, the colouring, when the leaves become fully grown, being very rich. Another grand variety is *C. Disraeli*, which in a young state makes a grand table plant; it is a kind that assumes high tints of colour early, and has singularly cut foliage that is highly ornamental. In order to keep up a good stock of young plants, it is necessary that cuttings be put in frequently, to supply the place of plants that have been several times used, or have become too large, which they soon do under treatment that suits them. The readiest way of striking cuttings of *Crotons* is to put them singly in small bottles of water, changing or adding fresh water daily, so as to keep it pure and sweet, as then the cuttings quickly root, and seldom or never decay at the base. *Crotons* may also be propagated easily in the ordinary way by inserting each cutting separately in a small pot filled with sharp sandy soil; but whichever plan is adopted, they must have strong heat, and with it plenty of atmospheric moisture, to prevent any flagging. When struck in water, great care should be taken in potting not to break or injure the roots, which, at such an early stage, are very brittle. Those struck in pots will simply need shifting on into others of larger size, but in no case ought they to be more than 6 inches or 7 inches in diameter; these will afford ample room in which to grow *Crotons* quite big enough for table decoration. The kind of soil most suitable for potting in is a mixture of fibry peat and loam in about equal parts, and a good sprinkling of sand should be added to keep the whole open, as *Crotons* require much water; and, in order that this may pass freely through, drainage is a matter of the greatest importance. Although *Crotons* may be safely used in rooms, or in a warm conservatory or greenhouse during the summer, they are all fond of heat, and need a high temperature to grow them in to get them to a good state of perfection. This being so, advantage should be taken of sun heat by shutting up the stove or pit they are in early in the afternoon, at which time a syringing with clear tepid water ought to be given, which will not only improve the atmosphere afterwards by making and keeping it moist, but will also prevent such insects as thrips and red spider getting established on the leaves, which they are sure to do if the air becomes at all dry. The way to bring out the colour of the foliage is to give the plants all the light possible, without subjecting them to direct solar rays, which should be broken by the use of a thin shade so arranged that it may be run up and down according to the state of the weather.

CALADIUMS, though inferior in merit to *Dracenas* or *Crotons*, are deserving of special mention for table decoration, some among them being particularly adapted for that purpose, and none more so than *C. Prince Albert Edward*, which has splendidly coloured leaves and *Alocasia*-like stems that stand up stiff and bold without flagging. Another magnificent variety that forms a fine contrast to the one just named is *C. bicolor splendens*, which has noble leaves, heavily veined and marbled with a very rich red. There are many others less handsome, but too numerous to mention, and I would only instance one other, the lovely little *C. argyrites*, quite a gem in its way. This variety, however, is small, and only fit for a very limited sized table, or to use with larger plants of other kinds, round or below some of which it forms a fine carpet. *Caladiums* of all sorts are very easily propagated and grown, as all that is necessary in order to increase any of them is just to start the bulbs, and split them through, so as to retain one eye or shoot to each piece, which, if potted and kept well supplied with heat and moisture, is sure to grow. What the plants like is a light, rich, sandy soil and moderate shade; but, as some of them are liable to flag, they should, before being used, be gradually

hardened by having an increase of air, which will improve the texture, and thus enable them to bear fuller exposure.

ARALIA VEITCHI is an elegant plant, having handsome foliage of a pleasing green tint, borne on a slender upright stem, which, though small, is stiff, and the whole habit pleasing and graceful. The way to obtain young stock is to graft on some other *Aralia*, *A. Guilfoylei* being a good stock with which, if the grafting is skilfully carried out, *A. Veitchi* readily unites. *A. filicifolia*, the Fern-leaved *Aralia*, is also a beautiful kind, and forms a good companion to the one just referred to. Both these *Aralias* require stove heat, and grow freely in any light sandy soil if supplied with plenty of water and kept free from scale, to which they are subject. *Cocos Weddelliana* forms a charming table plant, and is one that should always be grown where sufficient warmth can be afforded, as it is exceedingly graceful, having a slender erect stem, with beautifully arching leaves that are finely divided, and of a rich green. Although it will live in an intermediate house, a stove temperature is necessary to grow it well, but plants of it require watching, as they are liable to frequent attacks of red spider. *Areca lutescens*, in its small state, is also a desirable Palm for dinner tables, and one that will thrive in less heat than the *Cocos*.

Coming to ordinary subjects, none are more valuable than one or two of the *Chilies*, the *Prince* and *Princess of Wales* being remarkably showy. These bear conical yellow pods, that hang in great profusion under the branches, and have a very striking effect. The seedlings when up should be potted singly in any light, rich soil, and then plunged in a pit or frame near the glass, where they can get a fair amount of heat and plenty of light, which, with air, whenever the weather is favourable, will insure a good set. As standards look best for table decoration, the plants should be trained and grown in that form, which may easily be done by taking them in hand when young and disbudding the stems, so as to run them up clean a foot or so high, when they may be allowed to branch and make compact heads. Other plants adapted for table use that may be raised and grown from seed are *Acacia lophantha* and *Grevillea robusta*, both of which are handsome, their foliage being Fern-like. By sowing in light, sandy soil, and placing the pan or pot containing the seed in strong heat, plants may soon be had quite large enough, as they run up quickly with single stems, and are at their best when from 18 inches to 2 feet high. *Celosia pyramidalis plumosa* is another plant that almost anyone may have, as it may be raised from seed, which, indeed, is the only way, and grown in any warm frame as easily as a Balsam, and if the *Celosias* have the same treatment, they are sure to be good and full of gracefully drooping inflorescence. S. D.

CHURCH DECORATION.

FOR the decoration of churches at festivals, recourse need not be had to indoor flowers, for there is no lack of both native and exotic ones wherewith to produce most charming effects. In this locality, church decorators get plenty of practice, for, with the exception of Lent, we have floral decorations the year round, and certainly a vast improvement is noticeable in the mode of their arrangement. For stiff, formal flower-vases and holders are substituted banks of the greenest Moss, with flowers inserted in it as if growing. In this may be seen stately *Callas*, *Brugmansias*, and other large flowers, thinly placed, and set off by long trailing sprays of *Deutzia*, feathery spikes of *Spirea*, and large spathes of *Anthurium* or single or double *Pelargoniums*, variously coloured *Azaleas*, *Anemones*, *Narcissi*, *Jonquils*, and a host of other things too numerous to mention. These are arranged in shallow water-holders plunged in the Moss. Vases for placing on the altar are in some churches still extensively used; they are fitted with water-holders, so that short-stemmed flowers can be employed. Clear white flowers form the groundwork, backed up by Fern fronds. *Azaleas*,

Deutzias, Callas, and similar flowers are the most popular at this time of year, with a sprinkling of crimson or pink; but, as a rule, only two colours are employed, with a backing of green, for, when seen at a distance, mixtures of several colours are by no means effective, however well they may be arranged. Crosses and designs of various forms, consisting of wire or woodwork, on which flowers are tied with their stems wrapped in damp Moss, are largely employed, and for these, flowers with the shortest of stems are selected—such as cannot well be utilised for other decorations, notably *Stephanotis floribunda*, crimson and white double Daisies, double and single Primroses, and flowers of similar habit of growth. For window-sills coverings of green Moss forming sloping banks constitute the general style of decoration, and in this the flowers are arranged, and at no period of the year is there such a wealth of suitable flowers as in early summer. The woodland Primrose is most useful, tied in bunches with its own leaves. Other hardy flowers, too, are at home on mossy banks, and, skilfully arranged with their own leaves, look as if growing on verdant turf. For the font, a combination of cut flowers and plants is used, the top of the basin being covered with Moss, in which the flowers are inserted, and in the water Calla plants are set; their large white spathe and elegant leaves rising well up above the basin, have a striking effect, surrounded by Ferns, *Spiraeas*, *Deutzias*, and similar plants embanked in Moss. Large specimen plants are used with good effect in recesses of the stonework and on each side of the reredos. The most popular of all flowers for Easter is *Calla æthiopica*; but Ferns are also most useful and appropriate, and the more slender-growing Palms, such as *Cocos Weddelliana*, look well rising from a groundwork of Lily of the Valley. But, as in the cut-flower department, so in that of plants, the most striking effects are produced by a few well-defined colours, plain green in the way of foliage being far more effective than variegated leaves; and the flowers should consist of quite two-thirds of clear white ones. The other portion should be scarlet, crimson, or pink. For very flat or low decorations, the best of all green groundwork is *Selaginella denticulata*, grown in shallow tins to fit the desired space. Flowers are inserted in the moist soil, and in the subdued light and still, cool atmosphere of a church it is surprising how long they remain fresh, fair, and fragrant.

Gosport.

J. GROOM.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 158.)

NIPHOBOLUS NICOLOR.—This is a very pretty New Zealand species, closely allied to the better known *N. rupestris*, which is found in all parts of Australia. Like that general little favourite, it is most useful for covering slender Tree Fern stems; indeed, it can hardly be used in a better way, although it will readily cling to and grow well on a piece of porous sandstone.

Fronds numerous, spatuliform, measuring from 3 inches to 6 inches long, disposed on slender, wiry, creeping rhizomes, on which they are closely set; their under surface is densely covered with a white stellate pubescence, whereas their upper surface is of dark shining green colour; their substance is very leathery.

N. BOOTHII.—One of the strongest, if not the very strongest grower of the whole genus. Its foliage, which is somewhat less coriaceous in texture than that of most other species, often attains under good cultivation 20 inches or even 22 inches in height. The greatest peculiarity, and at the same time the most distinctive character belonging to this species is the length of the stalks, which are generally as long as the fronds themselves. This singular species, which is a native of the Eastern Himalayas, is also easily distinguished from all others in the genus by the upper surface of its fronds being copiously punctated with minute blackish dots, which appear to correspond with the position of the sori underneath. It makes a good specimen as a pot plant.

The rhizome, which is rather succulent, keeps well above ground. Fronds elliptico-lanceolate shape, slightly undulated at their edges, and obtusely acuminate. Stalks tawny brown, paleaceous, with their base only covered with imbricating ferruginous lanceolate scales. Fronds glabrous above, under surface covered with a ferruginous tomentum. Sori particularly small.

N. DETERGIBILIS.—This is a very curious and eminently distinct species, and one which, as regards habitat, has a very wide range. It is found in Nepal and in many parts of the Himalayas, chiefly in North Bengal and along the lower ranges of the mountains just named; from the very low altitudes of Silhet and Assam to 3000 feet or more in Kumaon, and from Simla in the west to Bhootan in the east. Thus it is subjected to various influences as respects climate. It varies a good deal in size according to the locality from which it has been imported. It grows in compact tufts, and is one of the very few species belonging to this genus that is adapted for pot culture.

Fronds glabrous above, downy underneath, ovato-acuminate when young and lanceolate when old, measuring from 4 inches to 15 inches in length and from 1 inch to 2 inches in width. The tomentum often peels off in dense cottony masses. Caudex peculiarly stout, densely paleaceous, especially about the base of the stalks, where it is covered with finely subulate scales.

N. GARDNERI.—This is a native of Ceylon, and perhaps the rarest species in cultivation, although introduced in this country so far back as 1824, when it was sent by Mr. Moon to Kew, whence it was distributed as the *Niphobolus costatus* of Wallich. By the peculiarity of the scales of the caudex, which terminate half an inch up the stalks in a circle of larger ones of a pale tawny brown colour, this species, which has often been confounded with kinds more or less similar in general appearance, may be at once distinguished. It also differs from most other kinds of *Niphobolus* in having its fronds, whose under surface is densely clothed with a lovely cream-coloured down, produced in compact tufts, an arrangement which renders it better fitted for pot culture than any other member of the genus.

Rhizome creeping and clothed with small, densely imbricated very black glossy scales. Fronds lanceolate, obtusely acuminate and strongly costate, about a foot in length, borne on stalks 3 inches to 4 inches high; these, unlike those of nearly any other known species, are stout, woolly, and channelled on the interior face. Sori not sunk, but superficial, and set in about four series parallel with the costules.

N. HETERACHTIS.—This Southern Indian species is perhaps the nearest of any of the kinds of *Niphobolus* to the well-known *N. lingua*, from which it is distinguishable at first sight by its more fleshy fronds and much thicker creamy-coloured down; instead, too, of being slightly undulated, as in that favourite species, they are smooth and slightly incurved; they also stand more erect, are produced in greater quantities, and have a somewhat mealy appearance.

Fronds similar in shape, either barren or fertile, seldom exceeding 6 inches high, including the stalks, and they are ovate in form and rounded at the base, and are abundantly produced from a thin and fast creeping wiry rhizome clothed all over with spreading brown scales.

N. LEVIS.—A charming little species of peculiar, but very distinct appearance. It is a native of the Himalayas and of the Khasia Hills, where, owing to its rapid growth and elongated slender rhizome, it is enabled to cover the stems of trees. Its delicate-looking little fronds, which are quite distinct in shape, form a very compact pale green carpet, only to be equalled by the more common *N. rupestris*, from which, however, it is in all other respects totally distinct.

Caudex creeping, copiously rooting the whole of its length. Fronds coriaceous, linear-lanceolate, 3 inches to 5 inches long by about half an inch wide; glabrous above, hoary underneath with a tuft of scales at their base. Caudex itself covered with peculiarly linear-setaceous scales of a light brownish colour. Sori large, partially sunk in the tomentum, covering nearly the whole of the underside of the frond and often confined to their apex.

N. LINEARIS.—A Japanese species, whose distinctive character lies chiefly in the uncommonly thin texture of its fronds. The latter seldom exceed 6 inches in height and 1½ inches in width; they are borne on short stalks, that rise from a small rigid rhizome, and they are also of a very peculiar pale green colour.

N. LINGUA (N. chinensis).—This thoroughly evergreen species, which has at different times been imported from China, Japan, Ceylon, and several parts of the East Indies, is undoubtedly the one most frequently met with in cultivation, possibly on account of its being a plant of easy culture. It is very hardy, and seems to thrive under any sort of treatment; yet it is only of medium growth, seldom attaining more than 9 inches in height. It is also one of the few species in which the two different sorts of fronds are entirely distinct in appearance; the fertile ones, although of about the same height as the sterile fronds, are contracted and wholly covered by the sori, which is of a peculiarly reddish brown colour. It is also very striking on account of the light brown or drab-coloured very small scales, which entirely clothe the under surface of the fronds.

Rhizome creeping, very long, rather slender, flexuose, and paleaceous, with ferruginous scales. Fronds borne on stalks 4 inches or 5 inches long. The leafy portion of the fronds varies between 4 inches and 6 inches in length. They are lanceolate in shape, obtuse or acuminate, densely and very compactly tomentose at first, but at length perfectly glabrous on their upper surface.

N. LINGUA CORYMBIFERA.—A variety of the preceding species which, although of the same size, is entirely dissimilar in all other respects; indeed, its foliage is so grotesquely contoured, that there is hardly any character left resembling that of the typical species. Whilst the fronds of the type are simple and lanceolate, those of this variety have their tops several times branched or lobed, the point of each division being furnished with a very large crest or tassel, which gives the plant a very peculiar, and at the same time a very ornamental and unique appearance. When grown in a pan of medium dimensions it makes a very handsome specimen. This is probably a barren form, for although plants of good size are sometimes met with, no fructification has ever been noticed on them.

N. NUMMULARIFOLIUS.—This pretty and truly elegant species is found in many parts of Southern India, where it is said to take possession of trees and cover them entirely. It has a peculiarly scandent habit, and though only of small dimensions, it proves very ornamental, and on account of its barren and fertile fronds being entirely dissimilar, it never fails to be a source of attraction.

Rhizome very long, filiform, copiously rooting, and covered with ferruginous scales. Fronds dimorphous; the barren ones only about 1 inch long, orbicular or subcordate; the fertile ones, about 2 inches long by half an inch wide, are linear-oblong, and the whole back of them is covered with sori, which are set without order. The elliptic or sterile fronds are sometimes slightly contracted and fructified at the apex.

N. PENANGIANUS.—This handsome species, which is very rare in cultivation, is entirely distinct in outward appearance from any other member of the genus; indeed, it seems devoid of all rhizome, and its numerous fronds, which are produced in clusters or tufts and almost stalkless, give the plant a good deal of resemblance to an *Asplenium Nidus Avis*, whose foliage should be covered with stellated hairs. It is a species which grows best in partly decayed wood.

Fronds sub-membranaceous, from 15 inches to 18 inches long and about 3 inches wide, oblanceolate, the base very much and gradually attenuated and the margin irregularly sinuated; when mature quite glabrous above, thinly clothed underneath with stellated hairs. Sori not sunk, but form a broad prominent mass in the disc of the upper half of the frond.

N. PERTUSUS.—A handsome evergreen species from the East Indies, and one well worthy of more general cultivation than that which it receives. To grow this kind to perfection a little more heat is needed than for the others, although it is not altogether a stove Fern. It is in fact admirably adapted for growing in a Fern case, provided it be kept in a dwelling-room.

Fronds simple; fertile ones linear-lanceolate and about 10 inches high; barren ones, which seldom exceed 6 inches in height, somewhat oblong and obtuse. Both kinds are borne on short stalks, seldom over 2 inches high, upper surface a bright shining green, underside downy. Sori dark red.

N. POROSUS (N. fissus).—This very peculiar species from Southern India resembles an *Elaphoglossum*, but its habit of growth is decidedly

that of nearly all other members of the genus. Its curious fronds, being scaly throughout, and the barren and fertile ones being totally different in form, give the plant a very striking appearance, which is increased by numerous little hairs which exist on each side of both kinds of fronds.

Caudex creeping, covered with ferruginous scales. Fronds coriaceous, about 10 inches long and 1 inch wide; the barren ones spatulate in shape and borne on short stalks; fertile ones linear-lanceolate, or even sometimes linear. Sori, which scarcely rise above the surface of the tomentum, very copious.

N. RUPESTRIS.—This is an exceedingly pretty little Australian species, very dwarf in growth, and one which delights in clinging to a block of sandstone or any other hard, yet porous, material. It also grows well in a Fern case, where it produces a very pretty effect, especially as the whole plant is of a greyish colour all over.

The fronds are simple and nearly attached to the rhizomes, which are extremely slender. The barren ones, which rarely grow more than 2 inches long, are spatulate in shape, while the fertile ones, about 3 inches in length, are linear and obtuse, fleshy, and stand almost erect on the rhizome, which is thickly clothed with light brown chaffy scales.

PELLSEA.

NOTES.

The Autumn Blueberry.—This is the popular name of *Billardiera longiflora*, a trailing or twining shrub well worth a place on low sunny walls. In May it is covered with greenish blossoms shaped like an extinguisher, and about 1 inch in length, but now every wiry shoot is a string of puce-coloured or purplish blue berries, and the effect of a well-grown plant or two is very pretty. The plant is readily increased by cuttings or from seeds sown as soon as they are ripe. An allied species, *B. repens*, the Apple-berry, is not at present so ornamental. This last we raised from New Zealand seeds, and it is now covered with long greenish fruits. Like the last, its flowers are not showy. Both species deserve attention by amateurs fond of curious or rare shrubs.

The Tiger Iris.—Just when the great flaunting petals of Kämpfer's Iris die away and we have bade adieu to the Iris proper for a time, these gorgeous natives of Mexico burst upon us in all their glory of scarlet and gold. In the early morning sunshine these *Tigridias* are most lovely. We have several kinds, but none finer than *T. grandiflora* and *T. Pavonia alba*, the first bright scarlet and the latter pure white with purplish blotches in the cup. Seeing how gorgeous these Tiger Irises really are and remembering how easily they may be grown, it is curious they are not more plentiful. On cold, wet soils they should be taken up like *Gladioli* and laid on the floor of a cellar or shed from which frost is excluded. Here, on our light sandy soil, they are perfectly hardy, but a covering of ashes or Cocconut fibre would save them in most localities.

Flowers of the twilight.—The garden is most sweet and interesting to me in the evening, when the great white and yellow Evening Primroses unfold their petals pure and fresh after the burden and heat of the day. Night-scented Stocks and Mignonette rival each other in perfume, and white *Nicotiana affinis*, so insignificant during hot days, becomes a revelation of beauty and sweetness also. It is in the evening or on dull days also that the old Marvel of Peru is seen to best advantage, each bush besprinkled with a thousand silvery stars and breathing with perfume. All these flowers of eventide are very lovely and should be cultivated, as giving to our gardens quite an added charm. While Tiger Iris and Morning Glory are the matin service of the garden, the flowers just mentioned may be appropriately called the evensong.

Beautiful flowers are ever the brightest and best of all personal ornaments, and the wonder is they are not even more generally used. A lady came to see our garden the other day and it was quite refreshing to see natural flowers in her hat as well as in her dress—not rare Orchids nor hothouse blossoms, but simple Clove Carnations and deep red Maple leaves. The effect was so

natural and exquisite, that I could not resist alluding to the good taste shown, and I could not help wondering why artificial flowers should be so largely worn by women who have the sweetest and best of Nature's gifts around them. "Ah," she said, "you notice my natural flowers, but few do so, except to laugh at me; and yet those who wear badly-made artificial blossoms would be aghast if you suggested artificial jewellery to them."

Peach Apples.—A friend who recently spent a short time in Dublin was delighted with the fine Peach Apples which are just now quite abundant there. It is an Irish Apple, which ripens its fruit in August, and may be eaten off the tree. It is not so well known in England, although I have seen it bear well on the cold clays of the midlands. It is a flattish fruit of medium size, with five prominent ribs, so that it is pentagonal in section if cut across, and the perfume and flavour are alike most enticing. It is greenish in colour, with a rosy cheek next the sun, but if kept a day or two after gathering, the green turns to a golden hue, and the fruit looks very handsome on the dish. As an early Apple to eat with Jargonelle Pears and Rivers' July Gage Plum, the Irish Peach is worth a place.

Plant Daffodils now.—It is very easy to admire Narcissi when in bloom next March and April, but now is the time to plant bulbs for next year's blooming, if not already performed. Most of the complaints anent the poor bloom of Daffodils, &c., the first year after planting are due to this operation being deferred until late in autumn. The great difficulty with myself is to get bulbs early enough, and no doubt others are in the same fix. Those also who intend to surprise their friends with some of the best of Daffodils in pots next February should lose no time in potting up their bulbs. Even the wild field Daffodil, so common in many localities, is beautiful when grown in pots for the greenhouse, but *N. Horsfieldi*, *N. obvallaris*, *N. maximus*, *N. nanus*, *N. princeps*, *N. major*, and *N. Bulbocodium* should also be potted at once.

Flowers and health.—Professor Mantogazza, of Pavia, has lately discovered that ozone is generated in immense quantities by all plants and flowers possessing green leaves and aromatic odours. Hyacinths, Mignonette, Heliotrope, Lemon, Mint, Lavender, Narcissus, Cherry Laurel, and the like all throw off ozone largely on exposure to the sun's rays. So powerful is this great atmospheric purifier, that it is the belief of chemists that whole districts can be redeemed from the deadly malaria which infests them by simply covering them with aromatic vegetation. The bearing of this upon flower-culture in our large cities is also very important. Experiments have proved that the air of cities contains less ozone than that of the surrounding country, and the thickly inhabited parts of cities less than the more sparsely built, or than the parks and open squares. Plants, and flowers, and green trees can alone restore the balance; so that every little flower-pot is not merely a thing of beauty while it lasts, but has a direct and beneficial influence upon the health of the neighbourhood in which it is found.

The doubling of flowers.—The interesting question whether the nature of the soil affects the doubleness of flowers of the first generation has been revived. M. Sterler, of Posenhofen, writing on the culture of Stocks, maintains that the number of plants with double flowers, assuming that the seed is good, depends upon the nature of the soil; that is to say, the same quality of seed that would bring a large proportion of double flowers in soil consisting of 75 per cent. of sand to 25 per cent. of loam would produce a large proportion of single flowers in a rich soil, especially in wet seasons. Pot culture, too, will insure a large percentage of double flowers. Dr. Regel holds the same view in the *Gartenflora*. It is not a little remarkable that luxuriance should induce doubleness in most subjects, and the reverse in Stocks, especially in plants where the nature of the duplication is morphologically the same; but no doubt

season and soil do exercise an influence in this way. Nevertheless, careful experiments to test the validity of this view, based upon incontestably ascertained facts, are desirable.

Wood ashes for slugs.—Some time ago Mr. Wood, of Kirkstall, mentioned that the potash of wood ashes was inimical to slugs, and I am glad to thank him publicly for his hint, and to corroborate his testimony. Most old gardens are over-run with slugs and snails. Box edgings and creeping shrubs, useful or beautiful in themselves and themselves uninjured, afford cool and grateful shelter to these hungry marauders, who sally forth at eventide to chaw up one's choicest alpine, or to ensconce themselves in the heart of some delicate little bulb. I am glad to say, however, that Lily and Gentian, delicate Bellflower, and Meconopsis, Erpetion, and *Primula minima* are comparatively safe with a cordon of wood ashes around them, much more so than when we trusted to soot and lime, the first of which is dirty, and the second bad for peat-loving plants. I remember reading somewhere that Mr. W. Wildsmith finds wood ashes of great service as a manure for Vines, and has a fire going most of the winter burning prunings and waste. Here also the preparation of charcoal and wood ashes will for the future be an especial feature.

Mutisia decurrens.—I wish someone who has succeeded with this rare climbing composite plant in the open air would favour us with information. It is such a beautiful plant when seen at its best, that I am anxious to try it out-of-doors. I find the following extract in the *Florist*, but what I desire is advice at first hand, as I have only one plant in a pot in the greenhouse and should not like to risk it without good grounds for its success out-of-doors: The showy, orange-coloured, Gazania-like *Mutisia decurrens* is found to be hardy at Floors Castle, growing on a south-west wall, where it has flowered every season for the last four years. Mr. Knight recommends that this handsome evergreen climber should be planted more freely, especially where conservatory walls have to be furnished. Mr. Coleman, of Eastnor, advises planting it in the open ground. Some years ago he procured a plant which was trained against a south wall, but finding the situation too hot and dry, he removed it to an open space in the grounds, where it grew vigorously, flowered profusely, and ripened seeds from which young plants were raised. Against a wall, with him, the old leaves and stems assume a rusty appearance; but planted out in the open, in a compost of peat and loam on a cool bottom, where it can ramble over rootwork or an old bush, it forms a striking object. It is impatient of close training, and well repays being left alone.

Daffodils in fashion.—Verily is the Daffodowndilly coming to town with a right good will, and the makers of bulb catalogues this year busily vie with each other in praising this popular April queen. Mr. Hartland, of Cork, sends me a pretty catalogue of a hundred kinds, several of which are supposed to be new, and Mr. Barr tells me he is now at work on an exhaustive illustrated list of all the Daffodils for the benefit of his friends and contemporaries. One test of the newly acquired popularity of the Narcissus as a garden flower is that the prices of some old and well-known kinds are rising year after year. Mr. Hartland has done good service in hunting up the Swan's Neck and other rare old Daffodils which have lingered in that "eden of the west," "Faire Irelande," as Chaucer has it. I often wonder what Parkinson would say to our Daffodil collections of to-day! These flowers are so beautiful, however, and have so many associations, that our gardens can never be too full of them.

The Banshee's Rod.—There are but few of our native waterside plants more classic in form or more distinct in port than is the common Bulrush, for which the peasants of the wild west of Ireland have invented, as I think, a far prettier name. If ever Flaxman had tried to model a Banshee, her wand would have been this slender-shafted Typha, and well would its grace

become the weird angel of evil who is supposed to be heard only on the approach of misfortune. But, while the Banshee is only the remnant of old superstitious faith, this water weed remains a thing of beauty, without which no pond or brook-side is complete. A little sheaf of its stately flowering stems and leaves placed in a large vase forms a good winter ornament, and contrasts well with silvery Arundo or Pampas plumes. It is when growing in the open air, however, that the plant is most distinct and beautiful, and the wonder is it is so seldom seen, except it be where Nature has planted it.

VERONICA.

FRUIT GARDEN.

LOW NIGHT TEMPERATURE FOR VINES.

I WOULD rather refer "Welshman" (p. 160) to the testimony that has from time to time been furnished by others in favour of low night temperatures for Vines, but I may state for the satisfaction of him and others that no one need have any fear about adopting the system as recommended by me for any variety of the Vine. In my own case both Muscats and Hamburgs improved under the system, and if "Welshman" chooses to call within the next week or two he may see the vinery that has for years been subjected to the lowest degree of heat and judge for himself. I think I may, without any misgivings, challenge him to find another such crop—produced by the warm system—whether as regards weight of crop, quality, or the general condition and appearance of the Vines. I have received letters from many growers who have adopted the low temperature system, all expressing satisfaction with the results; but the most valuable testimonial came from a late grower and well-known contributor to the gardening press, who began by condemning the system—predicting evil results from late ripened fruit and wood in more than one article to a contemporary—but was, nevertheless, induced to adopt the plan himself, and finally wrote to me privately to say that it had been perfectly successful. Had he lived I daresay he would have published his experience. I enclose name and particulars to the editor privately, and the following is an extract from his letter on the subject: "I have lately kept my night temperatures very similar to yours, and do not find the period of ripening retarded very much, or at all. The Hamburgs started about the middle of February, were perfectly ripe by the end of July; later kinds, such as Alicante, Gros Colmar, &c., are ripe now (end of August). My Hamburgs coloured very beautifully, although heavily cropped. I am sure they would not have coloured so well with ordinary night temperatures unless the crop had been reduced." This extract will answer "Welshman's" query as to the time taken to ripen a crop under low night temperatures, and my opinion is the same as the writer's.

Wortley.

J. SIMPSON.

COLOURING GRAPES.

THOSE who cannot get their Grapes to colour this season—general conditions otherwise being favourable—may despair, I think, of success in future, for I have seldom known a more favourable summer. I have always said that colour was not to be infused into Grapes by any special treatment about the season of ripening, as has so often been said, such as giving more air and less heat, &c., having always firmly believed that colour was one of those points of excellence that began with early growth and ended with maturity. This summer's experience only confirms this idea. Grapes of all kinds have kept their foliage well and coloured to perfection. This I attribute to the constant and abundant supply of fresh air, which the fine weather has permitted and the absence of fire heat. Grapes that are not going to colour will not colour by any treatment that can possibly be given them after they have passed well into their second swelling if they have it not in them before. I never knew Grapes that were pale green in the earlier period to colour

well. The essentials are a robust growth, good foliage, and plenty of air always. Then it does not matter so much about the temperature being high so long as it is not an artificial temperature. The most perfectly coloured Gros Colmars I have ever seen I saw this year, and they grew along with Hamburgs and were not hurried. I never saw this Grape quite black till this season and the examples were perfect, and so were the Hamburgs beside them, but as to flavour there was of course no comparison between the two; colour as it may, the Gros Colmar is one of the coarsest flavoured of Grapes.

S. W.

FRUIT TREES.

DISTANCE FROM THE GLASS.

I SEE that since fruit houses were made so light—glazed with wide panes of clear glass—it is often said that it does not matter much how far the trees are from the glass. One writer lately wrote that his Vines were 8 feet from the roof, under the apex, and did perfectly well. One can quite believe this, but what is the good of having the trees any further from the glass than is needful to prevent contact and chill, and a very short distance will prevent both? It must be apparent to any practical mind that in a vinery or Peach house, for example, whether it be lean-to or span-roof, every inch farther the trellis is removed from the glass the less weight of crop we get, because the length of rafter represents the greatest stretch of training room at command, and the farther we recede from the rafter the shorter the trellis becomes. The man who invented the movable Vine trellis, a few years ago, that could be pulled up or let down at pleasure, had to cut a yard off the top of it to permit its working, and did not seem to see how many pounds weight of fruit was lost in consequence till the fault was published, and therefore the movable trellis failed. I grudge every inch I have to take off a trellis. Two or three years ago I noticed that, although our Peach trellis was only about 18 inches from the glass, when one stood outside there always appeared to be a lost space at the top, where the white back wall could be seen between the top of the trellis and the glass. This space was not much, and represented the distance from the glass all over at right angles to the rafters, but I thought if I could fill it up, it would give me a good many dozens more Peaches, and so I put on several more wires, so as to lead the shoots up to the apex. This extra space we covered with young shoots in one year, and the following season these bore ten or twelve dozen extra fruit, and have borne extra since. This space is always left vacant in Peach houses and vineries, as the trellis bearers are run straight up to the wall instead of being curved up at the top to meet the glass, as they might just as well be. As regards the distance from the glass for Vines, it is quite sufficient if the shoots do not come in contact with it before they can be tied or laid in, for it has yet to be proved that anything short of actual contact is injurious. An amateur whom I know has his Vine rods 9 inches from the glass, and they are in excellent health, have always fine wood and leaves, and are very fruitful. Our Melon trellis is so near to the glass, in order to gain room, that the leaves are only saved from coming in contact with it by the wooden astragals an inch deep or more. Cucumbers the same, and yet they take no harm, and the foliage is grand and apparently all the better for its proximity to light. The question is, What possible harm can training close to the glass do? There is nothing in the glass itself to hurt the foliage unless it be the lenses that exist more or less in glass of any quality, but especially in inferior glass, and they do harm by burning only, no matter what the distance may be. The damage attributed to nearness to the glass might be traced in most cases to mismanagement in other ways and to deficient ventilation; but when the ventilators are opened in good time, the air is sure to find its way to the highest points where the foliage is and prevent injury. Moral.—Keep as close to the glass as convenience will permit in the case of all fruits and flowering plants whatsoever that love the light.—J. S. W.

5236.—**Grapes cracking.**—The berries of Madresfield Court Grape have a great tendency to crack at the footstalks just before they ripen. The cure for it is keeping the roots dry and also the atmosphere, when the Grapes are ripening. Our own berries of this variety have been much injured by cracking; the laterals on which the bunches were growing we cut more than half through between the bunches and the main stem, but even this, which must have very considerably checked the flow of sap, did not wholly prevent the cracking.—J. DOUGLAS.

Black Prince Strawberry.—I may lay claim (see p. 127) to have seen this Strawberry grown as well as thoroughly good growers could do it, and still I hold fast by my expressed opinion that it is only useful for producing a few small early fruit, and not to be named along with La Grosse Sucrée. When I said a few very early fruit I did not think that anyone would imagine this was written from a strictly numerical point of view, as every Strawberry grower knows the variety is very prolific, but a few very early fruit fit for table. Mr. Muir says he counted over a hundred fruit on a twelvemonth's plant. How many of these were larger than a marble? It is doubtless a variety that might be improved by thinning the trusses and fruit, but this cannot always be done, and I should certainly never grow Black Prince or recommend it while there are better varieties in the market.—E. B.

Ripening fruit buds.—I find a very general impression prevails that the excessive drought which we have experienced is likely to be of great benefit to fruit trees through its thoroughly ripening the wood and buds that are to produce next year's crop. Now I think we are all pretty well agreed that on the perfect maturation of the wood and buds greatly depends our hope of forthcoming fruit crops, but I dissent from the notion that dryness at the root will assist the ripening of the wood. In order to get the maximum benefit next year, owners of trees that show any symptoms of suffering from drought should lose no time in giving them a thorough soaking of water so as to reach the roots; if the leaves are flagging and the wood shrivelling it is impossible for the buds to be perfectly developed, and I fear that many who are congratulating themselves on the thorough ripening of the wood, as they term it, denoted by the leaves dropping off prematurely, will find to their cost that the drying-off theory can be carried too far. Under glass we water far more heavily than formerly, and with excellent results.—J. G., Hants.

Standard Cherry trees.—Cherries differ considerably in shape, some kinds growing much more erect than others while young, but all grow into a round, symmetrical head in the end. The wild Gean makes a much larger tree than either the Apple or the Pear, and so does the common Cherry, if allowed to grow. The standard tree produces by far the best results in crops, and much sooner reaches an abundantly productive stage, quite small trees on the common stock bearing almost as soon as planted. Without any pruning whatever the branches clothe themselves with fruit buds the whole length, no matter how strong they may be growing, and never fail to produce abundance of blossom. A branch of a Cherry tree affords one of the most instructive lessons to the pruner, because it shows that if it be exposed to the light freely, it needs no artificial assistance whatever to render it fruitful. It is a fact apparently not generally known that no amount of pinching or cramping of the top increases the number of fruit buds on a Cherry in the least, but in the end reduces their number by promoting the growth of infertile snags, that only grow the more they are pruned; consequently the Cherry grower who plants standard trees should give them an open sunny situation and each tree sufficient room to develop its head, and every branch will bear. Occasionally a single limb will push ahead of the others a considerable distance when the tree is young, and it should be cut back in winter to the same point as the others till it pushes several other side branches of shorter growth; but this is all, and the less the trees are pruned the better.

On wall trees the same habit is observable, and all the cultivator has to do is to lead off good shoots at regular intervals and let them grow. The Morello Cherry is of far more profuse habit than the common Cherry, and quite distinct. It produces as a standard a round, proportionate head and great quantities of fruit buds along the sides of the slender shoots, which always bear. Standards are never pruned, and would only be spoiled if pruning were attempted.—J. S. W.

INDIAN GARDENING.

BUT little is known or heard in England about Indian gardening; a few words concerning it may, therefore, be read with interest by those at home, especially now when so many young gardeners make up their minds to go abroad, either as Tea planters or in other capacities, and I notice that wherever a gardener settles down, be it in a tropical or temperate climate, he always forms a garden, and contrives (generally under great difficulties) to get a crop of some kind of English vegetables and flowers. In the plains of India English vegetable and flower gardening is carried on very successfully. I suppose no finer Cauliflowers, Celery, salads, Cabbages &c., are grown in any part of the world than in India. Balsams and Zinnias, too, are simply superb in September and October, and we use both for bedding out. In September our work begins in earnest; early sowings of Cauliflower, Cabbage, Celery, and salads are put in. In October (if the rains cease about the middle of the month) the main sowings are made, and successional sowings are put in about every fortnight. Maize is in season all the year round, and good kinds are grown to perfection and much prized. Sprouting Broccoli is one of our most useful vegetables, lasting quite good and tender throughout the hottest months, when all other English vegetables are dead. It seems strange that one of the hardest plants, as regards cold, should also be able to stand the greatest amount of heat. Several plants possess that good property; Strawberries, Daisies, and Violets all seem to thrive during the three months of scorching weather of March, April, and May, and very often June. It is the heavy rains that follow that kill them. Mushrooms grow well during six months of the year. We get the best crop from spawn taken from an old bed nearly exhausted. From this Mushrooms generally appear in six weeks; while in the case of old spawn from four to six months are required. Watercress is sown in September, and if kept shaded on a wet tank bank it is fit for use in six weeks. Celery does well, and when properly grown equals any I have ever seen. Cauliflowers are simply perfection this year; our crop of Autumn Giant averaged 1 foot in diameter; some were 16 inches across. Cabbages are good. Tomatoes when once allowed to fruit and rot on the ground, as they nearly always do here, seldom require to be sown again, as they come up every year from the seeds thus sown. Strawberries on some soils do well. Peaches grafted on the native stock, and planted in rich well-drained ground, grow to great perfection. Grapes and Figs have not had fair trials yet.

OF NATIVE VEGETABLES we have great variety all the year round. Our best are, Pumpkins, Maize,

runner Beans, Caladiums, Yams, Dioscoreas, Amarantus, Cucumbers, and Bananas, the last a large green sort which is used as a vegetable. Moreover, we have abundance of green material such as Mustard, Radish, the tops of several species of Peas, Fennel, Cress, Mallow, &c., and young shoots and flowers of Pumpkins, Brinjals, or Egg plants, are favourites with the natives; they are eaten simply sliced up and fried, or stuffed with meat or other things and roasted; thus treated they are very good.

THE FINEST NATIVE FRUITS are the Mangoes and Litchis; our district, Mozufferpore and Durhanga, is noted for both. There are many varieties of Mangoes; the best I think is the Malda, a large kidney-shaped, yellowish green fruit. It possesses none of the "turpentine flavour," or, as some people describe it, "carrotty" taste which some sorts have, but simply something too luscious to express in words. They are in season for several months. Litchis are also fine fruits, not unlike a good Grape in flavour, very juicy and refreshing. Next come Plantains or Bananas, of which we grow about fourteen kinds; the best are the Martaban, Cavendish, and a local sort called Malbogh;



The first Cedar of Lebanon planted in France by M. de Jussieu in the Jardin des Plantes in 1731.

several sorts are grown for use in a green state, and they are very fair eating. Papaya trees are now almost indigenous. Custard Apples and Pomoelos grow to perfection. Oranges in this district have not been grown much; very fine fruit come from Nagpore, Sikkim, and Nepaul, and would be desirable kinds to grow in Europe; they are most prolific and excellent in quality. Melons are the great fruit with the coolies during the hot months. They are grown in enormous quantities on the sandy deposits in the plains near most of the Indian rivers, and many a poor native has made a hearty meal of them and died in about two hours afterwards from cholera, because he preferred the Melon or Cucumber half ripe to a meal of rice or something more wholesome. Fancy making a dinner off a large half-ripe Cucumber or Melon, and then drinking a deep draught of dirty green water, as natives invariably do. For my own part, I like a nice ripe Musk Melon on a hot day; one sort grown round Lucknow is quite as good as an English-grown fruit. I have tried English seed, but the plants cannot withstand the attacks of a red beetle, the larvæ of which feed inside the stems, and the perfect insect eats the flowers and leaves. Thus mutilated, it is impossible for even the hardiest of plants to succeed. C. MARIES.

Durhanga.

TREES AND SHRUBS.

OUR EARLIEST LEBANON CEDARS.

THE history of the Lebanon Cedar since it has been an object of culture in this country is probably more interesting than that of any other ornamental tree of exotic origin. During the comparatively brief period that has elapsed since it was first planted in Europe it has been intimately connected with the history of modern gardening. No tree has had so much attention bestowed upon it, none has been nurtured with such fostering care, and no tree has imparted such a distinctive character to the garden landscape as the Cedar of Lebanon. Its stateliness of growth, absolutely different from that of any other tree, was at once recognised by the tree planters of a few generations ago. To our tree-loving forefathers we are indebted for the noble tree growth that is now so important a feature in many of our finest gardens, and to their forethought some 200 years ago we are also indebted for our magnificent Cedars. But where are the Cedars that planters now-a-days mean to bequeath

to generations yet to come? One may travel throughout the length and breadth of these islands and meet with but very few young specimens of the Cedar of Lebanon that will take the place of the venerable examples that must at no distant date fall victims to the ravages of time. Where are we to look for successors to the Cedars at Warwick Castle, Goodwood, Pains Hill, Gunnersbury, Linton, Garton, and a few other places? True, at Warwick there are some half grown Cedars that will in time occupy the place of the grand trees whose ponderous boughs overhang the Avon; but in nine places out of ten where old Cedars exist there are none to be seen to take their place. In all probability the numerous old Cedars that are now to be found in English gardens are the outcome of a short-lived fashion, such as that which obtains now-a-days of planting all kinds of

coniferous trees, whether suited to the climate or locality or not. No doubt it was the correct thing about a century ago to have at least one or two Cedars of Lebanon about the house, and it so happened that the subject taken in hand was just the tree whose merits rendered it worthy of being handed down to posterity. Would that we could hope that even a tithe of the trees which fashion bids us plant at the present time would develop into such noble growth as the Lebanon Cedar. If this tree had been planted in the same proportion as the Wellingtonia, we might in truth congratulate ourselves on the provision we have made for our heirs in the matter of ornamental planting. It would be folly to hope that the Wellingtonia will ever make an ornamental tree in the sense that the Lebanon Cedar is, for while in its youth it is as formal as it can well be, it is, travellers tell us, absolutely ugly in its old age. The near relations of the Lebanon Cedar from the Atlas and Himalayan Mountains, however, are receiving their due meed of attention from tree planters, particularly the Deodar, on account of the gracefulness of its adolescent stage. The Atlantic or Atlas Cedar, the African representative of the Lebanon species, is no doubt the more valuable of the two, and far more suitable for our climate generally than the Deodar, which is a tree

for particular localities only. There are numerous examples about the country of the Deodar having been planted in ill-judged positions, the consequence being an array of miserable starvelings.

According to the "Hortus Kewensis," compiled by Aiton, the date of the first planted Cedar is 1683, though this must be incorrect, inasmuch as there are records of a tree which was planted at Bretby Park, in Yorkshire, in 1676. That the Lebanon Cedar was not planted or even known in this country previous to that date may be inferred from the fact that no mention is made of it by Evelyn in his "Sylva," which appeared about the year 1664. Aiton's account was no doubt founded upon the celebrated trees in the Apothecaries' Garden at Chelsea, planted in 1683, and which were supposed to have been the first planted in the country, and probably in Europe. Though Evelyn does not mention it in his "Sylva," he is, according to London, supposed to be the introducer of it into Europe. In tracing out the modern or garden history of the Lebanon Cedar, Loudon has compiled in his "Arboretum" a long account concerning the earliest planted trees, which embodies many interesting little incidents in connection therewith. He says that there were Cedar trees at Enfield and Hendon which were said to have been planted by Queen Elizabeth, but there seems to be no authentic memoranda in corroboration of this assertion. There can be no doubt that the Cedar which may be seen to-day in the Chelsea Botanic Garden was among the earliest, if not the first planted, specimen. It is now a decrepit old tree, making a hard struggle with its greatest enemy, the polluted atmosphere of the great city. Though the epithet "magnificent" cannot now be applied to the tree, it is picturesque and interesting as a relic of departed grandeur. It would, however, cut a very sorry figure beside the noble specimens at Goodwood and Warwick. Contemporary with the Chelsea planted Cedars are those, no doubt, at Syon, Gunnersbury, Kew, and Chiswick, all of which still exist. There were also some famous trees years ago at Whitton, then the residence of the Duke of Argyll—the treemonger, as he was then called—who appears to have also planted the first Cedars in Scotland at Hopetoun House, but the date of this planting seems to have been several years later than the trees planted about London.

It was not until about the year 1734 that the Lebanon Cedar found its way into France; the first pair planted there were taken from England by Bernard de Jussieu. One was planted in the Jardin des Plantes. It is this identical tree that the accompanying engraving represents. It was one of the two which M. de Jussieu took with him, and both were so small that he is said to have carried them in the crown of his hat for safety. The tree planted on the mount in the Jardin des Plantes was measured about a hundred years after it was planted and was found to be 10 feet in girth. The companion tree, planted at Montigny, near Montreaux, is said to have grown into a far finer tree than that in the Jardin des Plantes.

One of the principal reasons, no doubt, why this Cedar is not more generally planted now-a-days may be attributed to the fact that it has the reputation of being a slow grower, and consequently years elapse before the tree assumes its true character. It need hardly be said that a tree possessing such a reputation at the present day, when trees that will not produce immediate effect are scrupulously shunned, stands but a poor chance of being plentifully planted. That the Cedar is not, however, an exceptionally slow grower there is abundant evidence, and no one of late years has so clearly refuted the assertion as that veteran tree planter, Mr. Marnock, who gave some time since a detailed account of the rapid growth that this Cedar had made at Greenlands, Henley-on-Thames, where within less than a lifetime there have grown up some noble trees. Planted in good soil on well-prepared sites, this Cedar is without doubt as rapid a grower as the generality of Conifers. It is to be regretted that Mr. Frost had not

planted Lebanon Cedars at Dropmore in his early days and nurtured them with the same attention that he has the numerous other Conifers under his care. These would have afforded valuable examples of the rate of growth of this Cedar. Had this Cedar been started on equal terms with the Deodar, Douglas Fir, and Araucaria, it would no doubt have developed as fine growth.

W. GOLDRING.

SOCIETIES.

ROYAL HORTICULTURAL.

AUGUST 26.

BEYOND a few showy groups of Gladioli, Dahlias, and China Asters, there were not many exhibits on this occasion.

First-class certificates were awarded to—

DIPLADENIA ELLIOTTI.—An extremely beautiful variety remarkable for its vigorous growth and large highly coloured blossoms. These are about the size of those of *D. Prearleyana* and similar in shape. The colour is a uniform pleasing deep rose-pink. Exhibited by Messrs. Lucombe, Pince, & Co., Exeter.

BEGONIA QUEEN OF BEDDERS.—A tuberous-rooted variety possessing a dwarf and bushy habit and bearing a profusion of showy single flowers of a delicate rose-pink colour. This variety seems to be pre-eminently suitable for planting out-of-doors in masses, and for this purpose it will doubtless be of great value. Messrs. Cannell & Sons, Swanley, exhibited two or three admirable specimens of it all profusely flowered.

DAHLIA MRS. DOUGLAS.—A double-flowered show variety as perfect in form and as rich in colour as could well be desired. The colour is a glowing red flushed with crimson. Shown by the raisers, Messrs. Rawlings, Romford.

BEGONIA SOUVENIR DE W. SAUNDERS.—A double-flowered tuberous variety remarkable for its dwarf, sturdy growth and stout, erect flower-stems, which do not rise more than some 9 inches in height. The flowers are large, very double, and quite circular in outline; the colour, a deep rich crimson-red. Exhibited by Messrs. J. Laing & Co., Stanstead Park Nurseries, Forest Hill.

GLADIOLUS ST. GATIEN.—A first-rate Gladiolus; spike long and massive, and beset for about half its length with large perfectly shaped flowers; colour, a glowing vermilion-scarlet flaked with lighter and darker hues. Exhibited by the raisers, Messrs. Kelway, Langport.

BESSERA ELEGANS.—This charming little Mexican bulbous plant was figured in THE GARDEN a short time since. Its slender graceful flower-stems rise about a foot in height and carry umbels of small star-shaped flowers of a bright red colour striped with white. It is almost hardy, but is best cultivated in pots in a greenhouse. Shown by Mr. T. S. Ware, Hale Farm Nursery, Tottenham.

Among other plants exhibited were a few interesting bulbs from Mr. Ware, such as the Mexican *Milla biflora*, which grows naturally in company with the pretty *Bessera elegans*; therefore both may be grown under the same treatment. The *Milla* is a handsome flower, and abundantly distinct from any other cultivated bulbous plant. *Pancratium maritimum*, a seashore plant from South Europe, was plentifully shown in flower; it is white and sweet scented. Mr. G. F. Wilson brought from his wood garden at Wisley some extraordinary flower-stems of the Tiger Lily (*L. tigrinum*). One was of the double variety, and measured 8 feet in height, carrying numerous flowers. The other was the variety *juvundum*, which differs from the other varieties of the Tiger Lily in the absence of bulbils on the axils of the leaves; the flowers, though somewhat smaller than those of the typical form, are extremely pleasing, being of a soft tint copiously spotted with black. These afforded another instance of how Lilies flourish in the Wisley Wood under Mr. Wilson's treatment. A variety of *Lilium auratum* was shown by Mr. Turner, of Slough, which had

the sepals broadly banded with red, but not so deep and rich as in the variety *rubro-vittatum*. The plant was labelled *rubro-vittatum*, but it is not really that variety, though handsome and distinct.

DAHLIAS were again shown plentifully, and on each successive occasion the blooms are of better quality, as we are now verging upon the height of the Dahlia season. Mr. Turner displayed about half a hundred double show blooms as perfect in every way as he usually shows them. These included two new sorts—Orlando, dark maroon crimson, and Lucia, pale purple—both very fine. A bronze Banksian medal was awarded to Mr. Turner. A similar award was made to Mr. Ware for collections of single and pompon varieties. The singles consisted of much the same sorts as on the last occasion, and among the pompons we singled out the following sorts as being the best of those shown: Gem, Favourite, Titania, Isabel, Little Princess, Fair Helen, White Aster, E. F. Junker, and Little Arthur. There was also a very brilliant sort called General Gordon, a "bedding" variety; it is of a fiery scarlet. A group of single Dahlias came from Messrs. Cannell. These were all of the small-flowered race, which are so popular for cutting, as they are not so heavy as the ordinary singles. The following half-a-dozen sorts we thought the best: Rotundity, Mrs. Moore, Golden Gem, Star, Sunset, and Midget. Some capital blooms of erect-flowered *Gloxinias* as fine as one could wish for were shown by Messrs. Cannell. Messrs. Rawlings took a bronze Banksian medal for a collection of double show Dahlias, among which were some new sorts named Sims Reeves, red, inclined to orange; Mrs. Carter, dark purple; R. T. Rawlings, Lord Salisbury, buff; and W. G. Grace. Mr. G. D. Harris, of Orpington, showed two new sorts named Magnet, deep crimson, and Arab, rich dark purple.

CHINA ASTERS in pots were shown admirably by Messrs. Carter from their grounds at Forest Hill. An extensive group was exhibited, representing, we imagine, every colour the China Aster is capable of producing. The distinct races, too, were well shown; thus there were the *Pæony*-flowered, the *Chrysanthemum*-flowered, and the pyramidal, all of which comprised red, purple, white colours, and many intermediate shades between these. A bronze Banksian medal was awarded to Messrs. Carter.

GLADIOLI from Messrs. Kelway again lit up the conservatory with a similar magnificent display as they had on the last occasion. But the present was more extensive, there being no fewer than fifteen dozen (180) spikes. There were numerous new seedlings all more or less of high quality. Those named General Gordon (scarlet), Maori King (crimson scarlet), St. Blaise (cherry-rose), W. Kelway (carmine-rose), Mary Anderson (blush-pink), and St. Gatien were the finest. A silver-gilt Banksian medal was awarded to Messrs. Kelway.

FRUIT AND VEGETABLES were not plentiful. The most important exhibit placed before the fruit committee was a new variety of Cucumber, called Purley Park Hero, raised by Mr. Mortimer, of Purley Park, near Reading, who exhibited it on this occasion. It is said to be a cross between Model and Sutton's Improved Telegraph; the fruits are long, clean, without shoulders, and of excellent flavour. It is said also to embody all the essential characters of a first-rate Cucumber. Several seedling Melons were shown as usual, but none were remarkable, either being inferior to older sorts or over-ripe or unripe. A new Fig from an out-of-door tree was shown by Mr. Boord, Ockendon; the fruits are large and brown when ripe. The committee desired to see it again with its foliage. A Red Currant, called New Defiance, came from Mr. Bowie, Chillingham Castle. It is apparently a first-rate sort, large in bunch and berry and extremely productive. The committee wish to see it again. Mr. Sydney Ford showed from Leonardslee fruits of the Siberian Crab about the size of large Walnuts and highly coloured, also pods of a new Bean (*Phaseolus*), which was recommended to be sent to Chiswick.

FRUIT AND VEGETABLE SHOW.

THE fourth of the series of fruit and vegetable shows held under the auspices of the Health Exhibition Committee took place on this occasion in the conservatory, half of which was fully occupied by the exhibits. It would not be too much to assert that a finer display of some kinds of fruits, such, for instance, as Peaches, Plums, and Tomatoes, has seldom been seen, the hot weather lately experienced having been particularly favourable for their ripening. The show could not be called a large one, but it was remarkable for the general high quality of the fruit. The classes were well represented, and some of them numerous, and the leading exhibiting gardeners from all parts of England were to be found among the competitors.

The competition in the class for ten kinds of fruit was very good throughout, four excellent collections being exhibited. The premier award was adjudged on this occasion to Mr. J. A. Rolis, M.P., Hendre Park, Monmouth, whose gardener, Mr. Coomber, is to be complimented on having outdistanced such a veteran exhibitor as Mr. Coleman, the gardener at Eastnor Castle. In Mr. Coomber's collection there was not a weak dish, every one, in fact, being of a high order of merit. He had strong points in Muscat of Alexandria Grapes, which were grand in size of bunch, good berries, and well finished. His black Grapes were Alnwick Seedling, finely coloured and large in berry; a fine fruit of Smooth Cayenne Pine, weighing over 8 lbs.; a large fruit of Hendre Seedling Melon, beautifully netted; Pitmaston Orange Nectarines and Stump the World Peaches, both large and finely coloured fruits; a fine dish of Williams' Bon Chrétien Pears, just fit for dessert; good dishes of Negro Largo Figs, Moorpark Apricots, and Plums made up this admirable collection. From Lady Henry Somerset's garden at Eastnor Castle Mr. Coleman showed the second best collection—also of excellent quality throughout. The most noteworthy were Gros Maroc Grapes, thickly covered with the characteristic blue-black bloom, and large both in bunch and berry; Muscat of Alexandria, well finished, but not so large as shown by Mr. Coomber; a weighty Pine; fine dishes of Peaches and Nectarines; a large fruit of High Cross Hybrid Melon, and good examples of Morello Cherries. From Gunnersbury Park Gardens Mr. Roberts contributed a capital collection for the third prize. He had strong points in Foster's Seedling Grape, Peaches, Nectarines and Figs, with a superb example of Wm. Tillery Melon. Three exhibitors competed in the class for pairs of Pine-apples, the finest being those from Mr. Atkinson's gardens, Gunnersbury House, Acton, and Mr. Hudson deserves credit for producing such a handsome pair of Smooth Cayennes, which were simply perfect as regards shape and balance of crown and fruit. Their weight was $7\frac{1}{2}$ pounds and $6\frac{1}{2}$ pounds respectively. Mr. Coomber contributed the second best pair, also handsome and weighty.

The class for Morello Cherries brought out a strong competition, a dozen dishes being shown, that from Mr. Coleman, who was first, being remarkably fine. There were no remarkable exhibits in the class for Figs, but the collections of Plums were excellent. There were four competitors. From Mr. Roger Leigh's gardens at Barham Court, Maidstone, Mr. Haycock brought a collection of nineteen dishes, nearly all of which were fine examples of their respective kinds; to these the first prize was awarded, the second going to the Earl of Harrington's gardener (Mr. Goodacre) at Elvaston Castle. For six kinds of culinary Plums, Mr. Somers Cocks, Thames Bank, Marlow (Mr. Bridgeman, gardener) was awarded the first with fine fruit. Among dessert Plums, the best six dishes came from Mr. E. M. Nelson, Hanger Hill House, Ealing (Mr. Chadwick, gardener), who showed the best of well known kinds. For three varieties eight lots were brought together, those put up by Mr. Bridgeman taking the first position; these were all fine examples. For the best flavoured kind, Mr. Chadwick took first with Green Gages well ripened. Taking the Plum classes throughout, the best dishes consisted of

among dessert kinds the Green Gage, Boddaert's Gage, Brandy Gage, Reine Claude de Bayay, Jefferson, Washington, Kirke's, and Coe's Golden Drop; of culinary sorts the finest were Pond's Seedling, Victoria, Belgian Purple, Cox's Emperor, and Prince Engelbert.

Some exceptionally fine fruit of Peaches came from Barham Court Gardens, Mr. Haycock taking first for three kinds with grand fruits of Barrington, Walburton Admirable, and Early Louise, repeating his previous achievement with ease in the single dish class, having enormous fruit of Belle-garde as large and fine as perhaps ever seen. There was a trifle lack of colour, otherwise these two exhibits were first-class. The class for three dishes brought out collections besides the one above named, Mr. Roberts winning the second prize with fine fruits of good colour of Belle Bauce, Grosse Mignonne, and Princess of Wales. From Mr. Vivian's garden, Singleton, Swansea, Mr. Harris brought three dishes that took the next position; these were remarkable for beautiful colour in each case. For Nectarines seven collections were put in competition for prizes offered in the class for three kinds, Mr. Roberts being an easy winner with beautifully coloured samples of Lord Napier, Victoria, and Pine-apple, all of large size; the second place was taken by Mr. Coleman with the Stanwick Elruge, Pitmaston Orange, and Albert Victor varieties. In another lot was a striking dish of Humboldt, one of the best of Mr. Rivers' raising. In the single dish class there were nine exhibits, the best and second best being Pine-apple, the former coming from Mr. Butler, Warren Wood, Hatfield (Mr. Aslett, gardener).

For dessert Apples (early kinds), Mr. Haycock again took first place with three dishes, the second prize falling to Mr. C. Eyre, of Welford Park (Mr. Ross, gardener). The best among these early Apples were Duchess of Oldenburg, Devonshire Quarrenden, Emperor Napoleon, Red Astrachan, Mr. Gladstone, Early Harvest, Irish Peach, Early and Scarlet Nonpareil.

For single dishes of Pears (dessert) Mr. Goldsmith, Hollauden, Tonbridge, won easily with Williams' Bon Chrétien, very fine. Among other dishes was a very fine one of Jargonelle, not ripe, however, and consequently passed over by the judges. Mr. Roberts took the first prize for a dish of Strawberries, showing Quatre Saisons of alpine origin very fine.

TOMATOES were shown plentifully on this occasion, and were of excellent quality throughout. In the class for single dishes there were twelve exhibits, Dr. Baber's gardener (Mr. Phillips) taking first with a new sort labelled Phillips' Perfection; these were capital fruits of fine shape and colour, somewhat resembling Hathaway's Excelsior.

POTATOES were shown in excellent condition in the class for twelve kinds, nine collections being put in competition, the best collection coming from the gardens of Mr. Hibbert's gardener at Chalfont Park; these were clean even samples throughout, rather large perhaps for the table, but nevertheless highly creditable. The sorts were The Dean, Vicar of Laleham, Cardinal, Reading Russet, Radstock Beauty, Veitch's Ashleaf, Cosmopolitan, Prime Minister, Beauty of Hebron, Sunrise, Snowdrop, and Magnum Bonum. From Mr. Ross came the collection to which was awarded the second prize; the best of his productions were Aspirant (fine), Sutton's Magnet and First and Best, Lifeguard, and Fillbasket, all very excellent samples. Classes were also provided for miscellaneous productions, but nothing of extraordinary merit was shown in competition for the prizes offered.

SPECIAL PRIZES.—In competition for Messrs. Carter's prizes for six kinds of Tomatoes, Mr. Phillips was first, having fine examples of well-coloured fruit, the best being Dedham Favourite, Vick's Criterion, Trophy, Perfection, and Greengage. In the second prize collection Stamfordian, from the Right Hon. Mr. Goschen's gardener (Mr. Gilmore), at Seacox Heath, Hawkhurst, were very fine samples of that kind. Messrs. Wheeler, of Gloucester, and

offered prizes for their Prolific Tomatoes, the first being taken by Mr. Castle, West Green Vineyard, Norfolk. This sort is similar to the old type, of medium size and high colour.

A list of awards appears in our advertising columns.

OBITUARY.

HENRY G. BOHN, the eminent publisher, died rather suddenly at his residence, North End House, Twickenham, on the 22nd inst., aged 88. Mr. Bohn was long connected with the Royal Horticultural Society, in whose proceedings in times gone by he took an active part; he was a member of its council, and more recently of its committees. He was enthusiastically fond of gardening, and especially of Rose growing, his garden at Twickenham being well stocked, not only with all that is good in that way, but also with Conifers and other rare trees and shrubs. The pleasant garden parties which used to periodically take place on his well-kept lawn, now some years ago, will still be fresh in the memory of many. Amongst the last things which he did during his long and useful life was the editing and publishing of Gordon's "Pinetum," a work which, though deficient in many respects, is still to be found occupying a prominent place in garden libraries.

QUESTIONS.

5238.—*Tobacco for fumigating*—I would be obliged by some of your readers giving me information as to how to save or dry a few Tobacco plants, which are now seeding fast, for garden purposes. I can grow the plants, but am at a loss to understand how to save the leaves.—A. C.

5239.—*Chilian Ivy*.—Will any reader of THE GARDEN kindly tell me the nature of the Chilian Ivy—whether hardy or half-hardy, stove or conservatory? I received some seeds of it through THE GARDEN some months ago. A plant has come up and grown well, and promises to flower, but I have quite forgotten how to treat it.—S. W. C.

5240.—*Spring water*.—Owing to the prolonged drought, we have been obliged here to use spring water, which is to a certain extent impregnated with lime, for our conservatory plants. I notice that the leaves of Pelargoniums and Begonias have turned yellow and sickly. Is this owing to the use of the spring water? I can assign no other cause.—A. M. R.

5241.—*Charcoal*.—Is charcoal injurious or not to plant growth, more especially to the formation of roots? I would be glad to know, as great diversity of opinion exists regarding the matter. Here we have a considerable quantity of charcoal refuse and dust, both of which have been used in the nursery borders with no evil results. I have, however, noticed that in the case of pot Ferns the roots seem to avoid as much as possible coming in contact with the charcoal; indeed, that the most luxuriant growth is obtained where it is not used. Perhaps some one who has studied the matter will express an opinion, as at least two persons, who until recently employed charcoal largely for potting purposes, tell me that it is not only highly injurious, but will ultimately destroy the plants.—A. D. WEBSTER.

Tuberous Begonias (*D. Doudeswellii*).—Some of your seedling Begonias are uncommonly fine, quite equal to the best named sorts, but as you did not name or number any of them we cannot particularise them. The two doubles are among the largest we have seen.

Names of fruits.—*J. S. Davey*.—Red Astrachan — *R. T.*—1, Red Quarrenden; 2, Red Astrachan; 3, Duchess of Oldenburg.

Names of plants.—*E. H. C.*—1, *Lycopodium alpinum*; 2 and 3, *L. Selago*; 4, *L. amatum*; 5, *L. clavatum*. *T. H.*—1, *Diplazium glutinosum*; 2, *Clerodendron trichotomum*; 3, *Eryngium amethystinum*; 4, *Chrysanthemum coronarium* fl. pl. — *G. Nisbet*.—*Saccolabium Blumei* majus (a good variety).—*M. E.*—Next week. — *J. W. R.*—*Fassifora quadrangularis* (the fruit of this species is the Granadilla which is edible).—*C. A. N.*—*Sedum Aizoon*, *S. Lydlum*.—*H. Burney*.—*Bupleurum fruticosum*.—*R. J. H.*—1, *Fassifora coriacea*; 2, *Torenia asiatica*; 3, *Tropaeolum speciosum*. Send better specimens next time. — *S. E.*—*Tecoma radicans*.—*E. T. J.*—*Lysimachia ciliata*.—*G. T. D. P.*—1, *Clematis Flammula*; 2, *Diplazium glutinosum*; 3, *Papaver nudicaule*; 4, *Anthericum canaliculatum variegatum*.—*M. F.*—Appears to be *Rosa pyrenaica*.

BULB CATALOGUES RECEIVED.

F. and A. Dickson & Sons, Chester.
Strike & Hawkins, Middlesborough.
Carter & Co., High Holborn.
Dobie & Mason, Deansgate, Manchester.
J. Dickson & Sons, Eastgate Street, Chester.
J. Veitch & Sons, King's Road, Chelsea.
Webb & Sons, Wordsley, Stourbridge.

No. 668. SATURDAY, Sept. 6, 1884. Vol. XXVI.

"This is an Art
Which does men's Nature change it rather: but
THE ART ITSELF IS NATURE." *Shakespeare.*

AMERICAN BLACKBERRIES.

It has long been a subject of surprise to me that England and other European countries never gave any attention to the culture or improvement of the Blackberry. In a land so noted for its gardens, its fruits, and its horticultural knowledge, with all the eminent names which adorn the pomological pages of its history, it seems a little strange to an American that so very little interest is manifested in the cultivation and growth of this most excellent and wholesome summer fruit.

If, as has been claimed, many of the indigenous Brambles which grow spontaneously in the forests and neglected fields of England produce fruit equal to some of our American garden Blackberries, that is yet no reason why improvement should not be sought or the berry should not be grown systematically and carefully in garden and field. And yet I am reminded that even here in America the Blackberry is not cultivated to the extent its value and importance would seem to warrant. Only in a few localities is it grown to any great extent, and fine fruit is usually scarce and high in our markets, and often not found in local markets at all except when brought from leading cities, and then the berries have been gathered a day or two and nearly unfit to eat. But in New Jersey and a few other places the Blackberry has for years past been grown for market to an enormous extent, and most successfully too most of the time. In 1878 the crop of Vineland, a single township in Cumberland County, on Delaware Bay, aggregated 15,625 bushels. The fruit sold from 3d. to 8d. per quart, 1½d. per quart being paid for picking. Taking the lowest rate, the sales would amount to over £6200. This year the drought and other causes are said to have reduced the crop on old plantations to about one-fifth of the ordinary yield, and yet on July 14 last the evening shipments there for the day amounted to 76,000 quarts, and a train of twelve cars was required to move the luscious load to market. Judge Parry, the veteran nurseryman and fruit grower of that large and fruitful county which extends across the State of New Jersey, from the Atlantic Ocean to the Delaware River, known as Burlington County, has been an extensive grower of Blackberries for forty-six years. He has seen 150 bushels of Blackberries grow upon an acre of ground there in a single season, the fruit selling for £120. A neighbour of his, he says, planted 75 acres of Blackberries, and one season his yield was 6500 bushels, for which he obtained £4400. A field with fair ordinary treatment there is expected to produce a return of from £40 to £60 annually.

These facts and figures are given merely to show what has been done with Blackberries in this country. I know they will read strangely enough to the conservative and, perhaps, incredulous gardeners of England. But they are facts, nevertheless, and, unless I am greatly mistaken, we shall be able to tell a very much bigger Blackberry story in this country in two or three years' time even than this, and just as truthfully.

The one great obstacle in this country to the universal cultivation of Blackberries thus far has been the want of a great, good, productive, reliable, and hardy variety. I say this because I believe it most emphatically, though I would prefer quoting it as the remark of some one of the hundreds here who are better qualified to express the opinion than I, if I had ever heard or seen it expressed. But the fact is we never had any variety that would produce a large crop of fine fruit and stand the winter unprotected north of the 41st parallel of latitude, so while our New Jersey friends could raise those immense crops, we in New York State and others living in the same degree and above had to be content to buy our berries from them.

Let us glance hastily at our leading sorts. Dorchester was, I believe, the first garden variety cultivated. Captain Lovett, of Beverly, Mass., is said to have introduced it about 1849. It is generally hardy, but not sufficiently productive. New Rochelle, or Lamton, is another old sort which was found growing wild by the roadside in Westchester County, N.Y. It is productive, but will not stand the winter, and the fruit is sour until it has been apparently ripe for some days. Kittatinny is also a native wildling, found in 1858 near the Kittatinny Mountains in New Jersey, a fine berry and often very productive, having more stars than any other sort in the American Pomological Society's catalogue, and yet it is frequently killed in winter, and is liable to the rust or fungus. Then we have Wilson's Early, the kind grown almost exclusively in New Jersey, and more than any other in this country. It is a magnificent berry, immensely productive, and deserves all the excellent things which have been said of it. The only trouble is it will not live through the winter north of New York. It is believed to be a sport of the trailing Blackberry, or a natural cross between it and the tall growing species. Its habit of growth is much like the former. It was found in Burlington County, N.J., by John Wilson, for whom it was named in 1854. It has doubtless produced more bushels and dollars than any other known variety. The Snyder and Taylor are newer and more hardy, but the fruit is too small and seedy. Early Harvest is still newer, but is not hardy or large, only valuable for its early ripening. Then we have a host of others, none of which worth naming as being of general value, unless it be Wilson Junior and a few other new seedlings raised by Mr. Parry; but these must yet be tested, although the Wilson Junior seems promising. There are only fourteen varieties of Blackberry named in the last catalogue of the Pomological Society, only three of which have any standard value in the list. Hence it will be seen that we are still in need of a good ironclad Blackberry to make the cultivation of this fruit uniformly successful throughout the States.

Now, as bearing upon this need, I will merely describe briefly what I saw growing on the grounds of the originator not many miles from my residence a few days ago, leaving each reader to draw his own inferences and make his own comments. A row of twenty-four Blackberry plants, two years old, bearing canes tied to a trellis, new growth tied obliquely to another trellis slanting backward from the fruiting trellis. No pruning had been attempted, and some of the canes were 9 feet high, well branched, and every twig was loaded with large magnificent fruit in all stages of maturity, much being ripe. The whole trellis

was a conglomerate mass of Blackberries from the ground to the very tips of the canes; scarcely a leaf was visible, and there were two sides to the show, each vying with the other in abundance. It surpassed anything I had ever seen in the way of productiveness. Many of our leading berry growers and Blackberry men, including Judge Parry himself, were present the day of my visit, and all agreed that it was the greatest Blackberry exhibit they ever saw. I estimated that these 24 plants would produce this season 10 bushels of fruit. Others placed the product much higher. The berries were uniformly large, averaging 1 inch by three-quarters of an inch, some measuring 1½ inches by 15-16ths of an inch, pips large, flavour sprightly and pleasing, no perceptible core, and few seeds. But the grand feature about the sort is that the canes had been left tied to the trellis wholly without protection all winter, and while Peach buds were killed on every side, not a single Blackberry bud had been injured, fruit being borne to the very tip of the canes. This is the second fruiting year of the variety, and it has never been winter-killed, yet over fifty miles north of New York city. Mr. Caywood, the originator of this new seedling, calls it the Minnewaska. He says it was produced by fertilising the pistils of the Kittatinny with pollen from a wild Bramble which he found growing in a swale on his farm. If the Minnewaska will continue to do even half as well in the future in varying conditions of soil and location as it now does in its youth, it surely is a most important acquisition which will very soon prove a powerful incentive to Blackberry culture in this and other countries. It is strange that our practical and intelligent pomologists should have been content all these years merely to grow whatever chance Blackberry seedlings they happen to find in fence rows, and not use any of the careful effort in the improvement of this fruit so lavishly bestowed on nearly every other.

H. HENDRICKS.

Kingston, N.Y.

Flowering shrubs in August.—I am struck with a remark by one of your correspondents, who speaks of shrubberies as well-nigh flowerless at this season. If they are, it is the fault of their cultivators. Here are a few that help to make our borders gay here at this time:—

<i>Clethra alnifolia</i>	<i>Hypericum arietinum</i>
<i>Olearia Haasti</i>	<i>patulum</i>
<i>Veronica</i> , various shrubby	<i>Androsæmum</i>
<i>Calycanthus floridus</i>	<i>Clematis Flammula</i>
<i>Potentilla fruticosa</i>	<i>coccinea</i>
<i>Eupthalamum umbellatum</i>	<i>Jackmanni</i> varieties
<i>Fuchsia Riccartoni</i>	<i>Ceanothus Gloire de Ver-</i>
<i>globosa</i> and varieties	<i>sailles</i>
<i>Myrtus communis</i>	<i>De-fontainea spinosa</i>
<i>Aloysia citricodora</i>	<i>Spiræa Lindleyana</i>
<i>Lonicera sempervirens</i>	<i>Douglasii</i>
<i>Periclymenum</i>	<i>callosa</i>
<i>Hydrangea paniculata</i>	<i>Jasminum</i> , several species
<i>hortensis</i>	<i>Escallonia grandiflora</i>
<i>quercifolia</i>	<i>sanguinea</i>
<i>Hypericum oblongifolium</i>	<i>Rosa rugosa</i>

The list might be amply extended, for it is the neglect of flowering shrubs, and not their non-existence, which makes so many shrubberies uninteresting just now. All the above are within 100 yards of the window of the room where I am sitting.—SALMONICEPS.

Bulb sales.—Not so very long ago auction sales of Dutch flower roots were confined to the tail end of the season, and were simply resorted to as a last resource in clearing off the remaining stock. Now-a-days, however, the bulb sales commence almost before we get the retail catalogues, and before our home nurserymen deliver their orders. In a word, there has sprung up a free trade in Dutch bulbs as well as in Orchids, and one result of this will be that at least a thousand

bulbs will be sold where a hundred were sold on the old-fashioned plan. No doubt competition has done for the Dutch bulb growers what it has done for the London market gardeners, *i.e.*, conduced to the growth of free trade principles. The auctioneer is gaining more adherents every day, and although individual interests may now and then suffer, the main results are far ahead of the old monopoly plan.—F. W. B.

ORCHIDS IN FLOWER.

Spathoglottis Fortunei.—This pretty little terrestrial Orchid is now blooming quite freely in the College Botanical Gardens at Dublin. Its flowers are of a bright yellow colour, five to seven being borne at the tip of a slender scape a foot or more in height. Mr. Burbidge told me the dry imported bulbs were sent to him from Kew, and that they were grown in a shallow pan suspended from the roof of a warm and airy Orchid house along with *Pleiones*, which are most luxuriant; also along with *Vandas* and two forms of *Dendrobium formosum*. *Broughtonia sanguinea* blooms here year after year. It has three spikes, and hangs on a block in full sunshine.—S. L.

Habenaria ciliaris.—Mr. Rawson sends from his garden at Bowness, Windermere, an uncommonly fine spike of this pretty North American Orchid, popularly known as the Yellow-fringed Orchis. The spike carries no fewer than forty flowers and upwards, the whole forming a pyramidal mass about 5 inches long. The flowers are of a bright orange-yellow, and the lips of the blossoms are furnished with a long conspicuous fringe. It is one of the handsomest native Orchids of the United States. It there attains a height of 1½ feet to 2 feet, and affects wet sandy places. Mr. Rawson remarks that it is a difficult plant to manage, but its beauty is well worthy of the extra attention it demands.

Disa grandiflora.—About eight years ago I had a small piece of this lovely Orchid placed under my care. It has grown and flowered tolerably well, but has not yet produced more than four flowers on one spike. It is the same variety as that exhibited by Mr. Rawson at the Windermere Flower Show last month. Two years ago it ripened some seed which was sown and germinated freely. When about twelve months old the young plants were potted into small 3-inch pots. From this period of their existence they have made but little progress; many have damped off, and the few that are left look as if they will require two or more years' growing before they will be strong enough to flower. Some seed of this season's growth has just been gathered. Will some readers of THE GARDEN kindly give their opinion as to the best way of sowing the seed and after the treatment of young plants?—W. B., Windermere.

Cattleya gigas Shuttleworthi.—We are continually describing varieties of Orchids of exceptional merit, and that which we now record is assuredly one of the most meritorious that we have noticed. As in the case of Mr. Hardy's variety, to which allusion was made a short time since, the extraordinary form which has just expanded its first blooms in Messrs. Shuttleworth, Carder & Co.'s nursery at Park Road, Clapham, is chiefly remarkable for the richness and brilliancy of the colour. The flowers measure 8 inches across the outspread sepals, which have a breadth of 2½ in. and are of a deep lilac. The labellum, the chief point of beauty, is almost circular in outline, being 2½ inches in length by the same in breadth. The colour of the lip is of the intensest carmine-crimson, overlaid by a velvety surface which intensifies the body colour. In contrast to this is a large blotch of lemon-yellow on the throat of the labellum, into which pencillings of the carmine-crimson tint runs. A variety of such superlative beauty is a rare find even among the thousands of plants that flower in this country, and such varieties will, therefore, always command high prices. Among other interesting Orchids in flower in this nursery is the fine *Miltontia Moreliana atro-rubens* and the pretty white *Burlingtonia candida*.

September Orchids.—An extremely beautiful variety of the genuine *Cattleya labiata* is now in flower in Mr. Bull's nursery at Chelsea. It possesses such exceeding beauty, that Mr. Bull has appropriately named it *brilliantissima*. The flowers are not only large, but of exceptional brilliancy. Besides this, there are numerous other Orchids in flower worthy of note, although the present is considered the dullest season. The list of flowering kinds includes the following:—

<i>Lelia elegans Schilleriana</i>	<i>Epidendrum ionosum</i> (very fragrant)
<i>Linoleyana</i>	<i>Wallisia</i>
<i>Cattleya Mendeli</i>	<i>prismatocarpum</i>
<i>Vanda Batemaniae</i>	<i>Odontoglossum hastilabium</i>
<i>Roxburghii cerulea</i>	<i>madrense</i>
<i>Cypripedium Haynaldianum</i>	<i>Spathoglottis Fortunei</i>
<i>Stonei</i>	<i>Oncidium dasytyle</i>
<i>Aerides flavidum</i>	<i>curtum</i>
<i>Lohbi</i>	<i>lorgipes</i>
<i>Saccolabium Fumei majus</i>	<i>macranthum</i>
<i>Zygopetalum Gautieri pictum</i>	<i>Dendrobium Dearthii</i>
<i>Trichocentrum recurvum</i>	

NOTES FROM SCOTLAND.

OWING to the mild weather, *Tropæolum speciosum* was not cut down last winter; consequently it is very fine this year. My attention was first called to it by Mr. A. Curle, Melrose, on the wall of whose house it was growing over 12 feet high. It is truly lovely this year, covering walls, cottages, hedges, and, indeed, anything it can lay hold of. This plant appears to be very sensitive to smoke; it never seems to thrive in towns. In Dr. Paterson's garden, Bridge of Allan, I saw a wonderful plant of *Lilium pardalinum*. One bulb planted twelve years ago now covers an area 24 feet long and from 2 feet to 5 feet wide, and when I saw it there were more than 300 stems in flower—truly a grand sight. The Orchids here were also in good condition. A very large form of *Cattleya Dowiana* was in flower, and there were some fine pans of *Disa grandiflora*, *Vanda tricolor Patersoni*, and an immense plant of *Nanodes Medusa*, consisting of twenty-five growths. This must be about the largest in the country. I also noticed some wonderfully fine examples of *C. gigas*; some superb varieties of this *Cattleya* were likewise in flower at Brentham Park, also at Mr. J. Gair's, Falkirk, and Mr. J. Buchanan's, Edinburgh. *Grammatophyllum Ellisii* was just coming into flower with Mr. J. W. Macdonald, Perth, thirty-five flowers being on the spike. At Ardarrach, Loch Long, I saw a fine *Cryptomeria japonica* and an *Araucaria imbricata*. The former was over 35 feet high and 25 feet through—one of the largest in the kingdom. The *Araucaria* was 40 feet high, had twenty-four tiers of branches, and was 3½ feet in circumference at 3 feet from the ground. They were a noble pair; the branches of both rested on the ground. Just opposite at Finart were two noteworthy plants in a house 20 feet long. One was an *Allamanda Hendersoni*, which has borne 1000 flowers this year, and which was still bearing trusses consisting of from five to eight flowers when I saw it. The other was an immense *Epiphyllum Jenkinsoni* covering the back wall. It had borne over 1500 flowers.

Colchester.

ED. A. WALLACE.

FRUIT CROPS IN NORTH YORKSHIRE.

AS regards tree fruits, aspect and elevation are important items in reference to fruit growing. It ought to be understood that the Cleveland district of Yorkshire is hill and dale, and that though not more than, say, twenty miles from the sea, there is an alpine and lowland climate alternating. For generations Cleveland has been a good fruit-growing district. The late Mr. Nicholson, of Eaglescliff, near Yarm, aided fruit culture greatly by his extensive experience and selection of what was worth growing for market purpose. No one can have passed over the Viaduct at Yarm without noting the unique appearance of the neighbouring fruit trees, every available space being occupied by trees. But then Yarm was without competition; now it has to contend with Hamburg or Rotterdam. I believe that the fruit growers in Cleveland are equal to anything that can be done in the way of growing hardy fruit; but how is competition to be met? In the case of small fruits,

with the exception of Red Currants, we have nothing to fear. In Black Currants Cleveland is superior to anything I have seen. Strawberries have been abundant, but under the usual size, and the season was short; President and Dr. Hogg have been by far the best for a general crop. Raspberries have been plentiful, but small. It is worthy of note that the *Semper Fidelis* Raspberry was this year large and prolific, which shows that it is a variety to be recommended for this cold climate, as hitherto it has not been worth cultivating in this district. Amongst Apples, Lord Suffield occupies the first place, Manks Codlin second. I now begin to appreciate what the late Mr. Rivers said of this ever-fruifol, small-growing tree, which also makes a valuable dwarf stock to graft on. Keswick Codlin is likewise a standard kind. Of early Apples for dessert, Oslin, Early Julien, and Juneating have produced light crops; to these I would add Quarrenden as specially worth planting in this district. Of Cherries—which are not much grown in Cleveland—we have a full average crop this season. Of Plums on favourable aspects there are a few Victorias and Golden Drops. From year to year we only see Victorias and partial crops of Golden Drop and Diamond occasionally. This year Pears may be said to be a failure; there is nothing like a crop of any variety that I have seen. Jargonelle has been a failure for years, and equally so Green Chisel—the two most valuable Pears for this climate. There are two Pears seen in this district in a few gardens which appear to have been planted some half century ago, and which do well and are profitable, viz., *Passans de Portugal*, much esteemed, and *Yat*, a great bearer. Imported fruit of this variety is sold here as *Marie Louise*, a fact which speaks for itself as regards the quality of this Pear. Another old Pear which does well in Cleveland, but which is rarely seen, is *Windsor*, or "Bell Tongue," a very handsome fruit, and one which always commands a ready market.

CHAS. McDONALD.

WORK DONE IN WEEK ENDING SEPT. 3.

AUGUST 28.—Never were showers more welcome than those that fell to-day, for though we have the advantage of a fairly good supply of water, the labour of applying it was becoming burdensome, more especially so as it seemed to do but little good; still the waterings kept the recently planted Broccoli and Kales alive, and now our labour will be abundantly repaid by kindly growth and our winter supply of greens is assured, which, it is to be feared, will not be the case everywhere. All our winter stuff we plant in deep drills, and now as soon as the ground has got a good soaking, the drills will be filled in. The earlier plantings have been done to-day and earthing up will follow shortly. Thinning Turnips and Lettuce; about 9 inches apart for each is ample space for this season of the year. Black-seeded Bath Cos is the only winter Lettuce we grow; but as to Turnips, one kind stands as well as another. Herbaceous plants have had a good deal of trimming up; some of them, through lack of water, are looking very seedy, and so we have relieved them of their bad flowers and seed-pods, and this rain will set them all right. The Japanese Anemones, perennial Sunflowers, Rudbeckias, and Phloxes are at the present time so gay that the one-idea flower gardeners (bedders-out) would surely be converted could they but see them. Once a week it is necessary to go over the plants for the purpose of tying and removing bad flowers and weeds, and with this amount of labour, the stock-charge against them, namely, lack of neatness, has no foundation in fact. It is not often that one rejoices that the sun does not shine, but I confess that I did so to-day, as it enabled me to have a comfortable hour or two in the houses, directing as to removal of laterals from late Vines, the thinning out of shoots from the late Peach house, and likewise from Figs. The growth on the latter has been abnormally large, and to ripen the latter fruit it is imperative to pinch back rather hard far more so than we usually care to do at this late season of the year. Advantage was also

taken of the cooler temperature to clean and rearrange some of the plants; Gardenias in particular, being badly affected with soft scale, had a good washing with soft soap water, the final touch being a syringing overhead with tepid water, in which we put a quarter of a pint of paraffin oil to 3 gallons of water. A dressing of this description has quite settled the mealy bug which used to infest the plants.

AUGUST 29.—A fine day, but dull; just the weather for working in comfort; and therefore we set about doing an important piece of work, viz., harvesting the spring-sown Onions—they having ripened prematurely—in order that we might plant our earliest plot of Cabbages on the same ground. The ground was simply hoed, the weeds picked off, and drills drawn 2 feet apart, the plants being put in at but a foot apart in the row; this enables us to pull out alternate plants in the early spring without, as it were, interfering with the principal plot at all, yet we have a supply of young Cabbages for weeks in advance of our needing to touch the permanent plot. The Onions are placed on the walks, and here they will remain till thoroughly dry. Winter Spinach was sown to-day, and another sowing will be made a fortnight hence, as a kind of safeguard against the premature seeding of the first sown crop, which, should the winter prove mild, would most probably be the case. Putting in cuttings of Pelargoniums, Pinks, Carnations, and Phloxes, tying the shoots of Chrysanthemums to the stakes that were put in some little time ago, potting on Poinsettias and Euphorbias—*jacquiniæflora*—which latter we grow in the winter as a climber in the Melon houses and train to the trellis. It is simply invaluable for cutting either for vase or personal decoration from Christmas to April. Though very early, our earliest Muscat viney was pruned to-day. Thrip and spider had got such hold of what little foliage there was left, and the wood being hard and brown and the buds plump, I thought there could not be much risk in pruning so early; at any rate the job is done, and if harm comes of it, due warning shall be given that others may not err in the same direction. The only indication of mischief that I at present perceive is that some few of the shoots are bleeding, but that, I think, is partly the result of a heavy watering which was given to the border (inside) as soon as the pruning was done.

AUGUST 30.—In addition to the usual Saturday's general clean up, the day being dull with occasional showers, time was found for watering inside borders, and as at this season the water is sufficiently warm without artificial heating, much labour is saved both in that way and also in regard to pumping, the rain water being used from the tanks in the houses. I ought perhaps to say that no inside fruit border under my charge is ever without a mulching of straw or litter; this enables us to water without splashing the surroundings with dirt. It always looks neat, and what is more the soil seldom cracks if mulching be given in sufficient quantity. Picking over of plants, shaking down the loose leaves of Vines and Peaches, and scrubbing out complete the work done in the houses to-day. Mowing and edge-clipping of the flower garden, and picking off the bad flowers, also clipping the *Herniaria* edgings, of which all the upright edgings to the flower beds are formed, and pinching back variegated *Mesembryanthemum* and Golden Feather, taking offsets from succulents, the flowers from *Ricinus*, seed-pods from Dahlias, and tying them up and in some cases pegging them down, for some of the varieties, notably *gracilis perfecta*, are amenable to this mode of training, which if stakes are scarce is a great convenience, but we have done it from choice with a view of getting the beds cone-shaped, in which form they look like huge bouquets, and set off to perfection the more formal designed foliaged beds. These jobs and rolling of walks, which we always try to do after a good rain, end our duties for the week.

SEPTEMBER 1.—Rain again, and we are glad of it. Already there has been a resurrection in the

kitchen garden. Cabbage and Cauliflower that were lately blue have put on their more natural tint, and, late as it is, conditions being so favourable, other Broccolis are being planted, also Kales, Savoys, and Coleworts. Winter Greens must necessarily be short this year, and it is worth while to risk a loss of some plants or partial failures to eke out the supply. Earthed up Autumn Giant Cauliflower, Snow's and Veitch's Protecting Broccoli, and Brussels Sprouts. This process we never undertake until the ground has been well saturated; then the ridging up keeps the plants in a moist state for a long period—in fact all the season—as the drought from now onwards is never of a protracted nature. Strawberries have been denuded of runners, bad foliage, and weeds, and are now being "pointed" over merely with a view of neatness, and as a preparation for the new mulching of well decayed manure that will be put on as soon as time can be spared to do it. We have yet some to plant; the ground being occupied with French Beans necessitated our waiting till the crop was off, but planted carefully and well tended as to watering till established, they will do just as well as those planted a month ago, a point we have practically tested, but for all that, earlier planting is desirable. Wasps are still so troublesome that we have cut and put in the Grape room a goodly number of bunches, and the other houses have still to be kept closely netted over the ventilators, which is much against ripe Grapes keeping satisfactorily this damp weather, and to obviate which, a little fire is kept on at night and the ventilators are left open; at least, such as do not admit rain. I suppose it is because there are so few that birds (tomtits) are more troublesome than ever with Pears; they apparently mean to destroy the lot, but we must have a few, and therefore netting over is being done. Early Apples are being gathered; they are very small and much injured by wasps and birds, that a short season is a certainty. The rain, by providing better supplies of food for birds, may save the later varieties, but to be on the safe side we mean to gather all that are any way approaching maturity. Roses promise to be as fine as in June. A little mildew has made its appearance, and sulphur has been applied to kill it; a good soaking of manure water is about the best antidote, but this is a scarce commodity hereabouts. The bad flowers are kept off, the edgings of beds grass-clipped, and the surface soil mulched with Cocoa fibre.

SEPTEMBER 2.—I have the weakness, that perhaps would be better described as strength, in regard to the keeping of walks—that is, I like to see them clean, free from weeds and moss, and comfortable to the tread; the latter they have not been lately, but now that rain has softened the gravel the roller to-day had due effect. Frequent rolling takes up a deal of time, but weeds do not grow so fast, and, balancing one with the other, the verdict must be in favour of rolling. Machine mowing was again commenced to-day, and sweeping up of leaves from Limes in particular is now a daily affair. Excepting propagating, there is now a comparative lull of work in the houses, and a spare hand or two from that department now helps to keep the outside work well in hand, such as keeping herbaceous plant borders in trim condition, picking off seeds from Sweet Peas, cutting and bunching up Everlastings (*Helichrysums*), and tying up Gladioli, Asters, and Stocks, gathering of Apples, and protecting fruit from wasps and birds.

SEPTEMBER 3.—Sub-tropical beds had to-day a general overhaul; some of the plants had outgrown their bounds, and to keep the edgings trimmed some of the leaves had to be cut off, also decaying inside leaves. Groundwork plants are now let go at random, as the larger plants cover these. The best—most effective arrangement—are the simplest: *Acacia lophantha* and *Perilla laciniata*, alternated with edgings of *Salvia argentea*, is good; *Solanum robustum* and *Solanum marginatum*, with edging of *Centaurea candidissima*, is equally so. The best self beds are *Wigandias* and *Ricinus Gibsoni*. Hardy Ferns suffered

from the extreme drought and heat alike with all other vegetation, and the dead and rusty fronds have been removed, weeds and fallen leaves cleared from amongst them, and they now are passable for the rest of the season. Privet hedges that form screens for framing grounds, plants, and manure heaps have been sheared, and Laurels and Yews that overhang walks must follow soon as Potato digging is finished, which has formed a great part of our work to-day. HANTS.

NOTES OF THE WEEK.

Baskets of flowers.—At a small show held up the Swansea Vale at Pontardaw one day last week I saw more beautiful hand-baskets of flowers and floral centre-pieces for tables exhibited than I have ever seen at the largest of shows. Floral art work of this kind is made a speciality of here, and many of the arrangements were truly charming, especially those of Miss Lloyd, Cily-beyll, and Mrs. Gilbertson, Dan-y-graig. Ferns, Grasses, and wild flowers were freely used in many of them, and we would like to see this class of decoration take the place of the dreadfully formal bouquets too often seen at really first-class shows.—CAMBRIAN.

Heckfield Gardens.—The beautiful garden at Heckfield Place, near Winchfield, will, we learn, be open to visitors during the whole of next week (8th to 15th) by permission of Lord Eversley. This garden, so rich in landscape beauty, a perfect model of high keeping, and so exemplary as regards high-class cultivation in every department, abundantly repays a visit even from a long distance. After the copious rains of late we imagine that the garden is in the pink of perfection, and country visitors to London interested in beautiful gardens should not miss the opportunity. The nearest station is Winchfield, on the South-Western Railway, from which Heckfield is a few miles distant; Reading is also within driving distance.

A Dahlia show.—A special show of Dahlias of all kinds, single and double, shows and Pom-pones, will, we hear, be made in the conservatory at South Kensington on Tuesday next by Mr. Charles Turner from his nursery at Slough. The Dahlias are exceptionally fine this year, the late showers having been highly favourable for them. The show of Dahlias in Mr. Turner's Slough Nursery amply repays the journey from London, and the best substitute for seeing them "at home," where the habit, stature, and productiveness of each sort can best be seen, will be the display which Mr. Turner promises to make at South Kensington, and which, we anticipate, will be unsurpassable. In order to give the multitudes of visitors to the Health Exhibition an opportunity of seeing what first-rate Dahlias are, Mr. Turner intends to replenish his show daily during the remainder of next week. This show will afford a capital opportunity for making selections.

Catalogue of Roses.—We direct the attention of our readers to the important catalogue of Roses published in the present number. It was compiled by the late Mr. H. B. Ellwanger, of Rochester, N.Y., and is embodied in the excellent "Treatise on the Rose," which appeared shortly before the death of its author. The list is as complete as could be, although, as the compiler remarks in his preface, it may contain slight inaccuracies and omissions. At any rate, it is the best and most exhaustive list of Roses in the English language, and as such we are sure that it will prove a help to those of our readers who are Rose growers. Such a list was a desideratum, for ample as are the catalogues issued by the large Rose growers, they are by no means inclusive. A complete Rose list has been almost a daily want to ourselves in office work, but now we have a great help in this excellent list. Should our readers detect mistakes, we shall have pleasure in placing their communications in the proper channel for future revision of the list. The "Treatise on the Rose," embodying this catalogue, is a worthy memento of the industry of its author.

The Li-Chi Fruit.—This very typical Chinese fruit, which has attained a certain amount of popularity in England, possesses an interest far exceeding its virtues as a pleasant luxury. Its history dates from 140 B.C., when the Emperor Wati endeavoured to introduce it from Annam, its native habitat, into his garden at Chang-an. Hundreds of plants were brought to China for many successive years, but they all failed to acclimatise, and it was found useless to make any further efforts. This fact, however, only increased the value of Li-Chi, which in 200 B.C. was sent as a tribute from Annam to the Emperor Kao-tsu, at a frightful cost of human life. As the fruit only keeps fresh for ten days at the most, and it was necessary that it reached Chang-an in good condition, relays of men were required to run at full speed, bearing a load of Li-Chi, and in this forced travel the majority of them broke down through sunstroke by day and the attacks of serpents and wild beasts by night. In the middle of the eighth century, the Princess Wang, whose appetite for Li-Chi was unappeasable, established a pony express, and this also was carried out at a great sacrifice of horseflesh. She was, however, not peculiar in her liking for Li-Chi, for the poet Su Tung-po, who was in exile at Canton, allowed himself the moderate quantity of 300 per diem and wrote a poem in their favour, declaring that they were delicious enough to reconcile a man to eternal banishment; moreover, it is stated in the Genii Records that there were individuals who, from having attained immortality by using its flowers and fruits, were called Li-Chi genii. Ko-Hung, a great authority among the Taoist philosophers, praised it unceasingly as a "marrow tonic," but, notwithstanding his constant use of it, he died at 81 under some uncertainty as to whether he had become a Li-Chi genius or not. Perhaps some of these attributes may be accounted for by the fact that the Li-Chi tree does not come to maturity until it is fifty years old, but, once begun, it will continue to bear fruit for 500 years, while its timber keeps sufficiently sound for use for nearly a thousand years. It is singular in its habits of growth, being found in China growing on the hills in Kwangsi and in the plains in Kwangtung, but in all cases at a distance from water. For the first five years, according to Dr. McGowan in the *North China Herald*, it requires to be protected from cold, being remarkably sensitive to frost and electricity, which is very prejudicial to it, so much so that a thunderstorm, it is said, will cause the flowers and fruit to be small.

BANKSIAN ROSE.

THE present hot summer has clearly shown the conditions which suits this Rose the best, for they have not made such a luxuriant growth since 1874. It is pretty well known that they are capable of enduring a certain amount of cold weather, but more recent experience shows that a mild winter and a hot summer suits them best, and in selecting a position for them this should be borne in mind, as the results show that in some cases it may be advisable to go a little out of our way sometimes to give them the warmest positions to be had. If this Rose has grown as luxuriantly in other gardens as it has in ours within the past six weeks, they will require very careful attention now, or there will be danger of spoiling next year's crop of flowers. It is our practice every year at the end of June to go over our plants, nailing in the growth where there are any vacant spaces to cover, and in the case of old-established plants we shear back rather hard all the growth which has flowered; by doing it thus early in the summer there is ample time for new growth to be made and matured before winter sets in, but this season there has been so much growth made since the plants had their annual pruning, that we have just now gone over them again very carefully, cutting out with a knife all the longest shoots and allowing the short flower-bearing branches to remain. These extend farther away from the wall than we like to see, but there is no help for it, for to cut them off, as just stated, would be to cut away the next season's flowers. The best aspect

for this Rose is south or west, as it requires to be sheltered from cold wind, which frequently occurs in the month of May, just when it is putting forth its first flowers. Given a warm aspect and plenty of space for the roots, this Rose is not very particular as to soil.

J. C. C.

INDOOR GARDEN.

WINTER CULTURE OF MIGNONETTE.

MIGNONETTE is of easy cultivation when once its requirements are understood. Some potfuls are useful and acceptable for decoration at all times, but especially in the spring and early summer; it can then be obtained in greatest perfection. During hot weather Mignonette has a tendency to produce seed so fast, that its beauty is soon lost. It is grown largely and well in the London market gardens, and it is but reasonable to suppose that equally good results should be obtained by winter cultivation away in the country where the atmosphere is much clearer. The earlier the seed is sown in September the better, as the plants then get tolerably strong and are better enabled to withstand the winter. It is best to sow in the pots in which the plants are intended to flower. These should be 5 inches or 6 inches in diameter, and be used clean and well drained. A good proportion of old mortar mixed with rather heavy loam and some dried cow manure I find to be an excellent compost. This can scarcely be rammed too hard in the pots if used somewhat dry, as the roots when once started will penetrate the hardest of soils. In filling the pots care must be taken that the whole of the soil forms one mass, for if it be rammed in separate layers, neither the roots nor water pass through it so freely. A little of the same soil should be sifted for covering the seed after it has been sown. The latter, if good, will only require sowing thinly, and the pots may be placed in any cold frame until the end of October. Abundance of air should be admitted after the plants appear, and these should be gradually thinned out to six or eight, according to the size of the pot. It is not advisable to thin too much in the autumn, as some of the plants are liable to die away in the winter. Those selected should be the strongest and most evenly placed over the surface. Mignonette is best kept through the winter in a cool place where all available light can be obtained and air admitted on favourable occasions. It should not be encouraged to grow in mid-winter, as it then becomes so weak, neither should it be exposed to dry fire heat. A position near the glass in a house where Carnations, Bouvardias, and such like plants flower in winter suits it admirably, as the circulation of air admitted by the laps of the glass prevents injury to the Mignonette by the necessary fire heat in severe weather.

Frames, such as are used for bedding plants and where heat is only applied to expel damp and keep out frost, may also be employed, but as these have often to be covered up during a spell of frost, the house has a material advantage. Some advise keeping Mignonette dry in winter, but I consider this quite a mistake. The plants do not require so much water at this season, but some should be given whenever necessary. If this is not done in all probability they will die when it is given after allowing them to get quite dry. As the days lengthen in spring and the flowers show, plenty of water should be applied. A little artificial manure mixed at first with an equal portion of dry loam and spread with a label over the surface of the soil will prove beneficial, and the strength may be increased with safety as the plants progress. A small stick placed to each plant when young will keep them from falling about, and a much better shaped plant can be obtained than if it be tied later on. Batches to succeed these may be sown at intervals during the summer, and, with the exception of selecting a cool position, the same treatment may be adopted.

The best variety we have found for pot culture is a selected form of Miles's Spiral. It is not easy to obtain it true from seedsmen or to keep

it true if other sorts are grown. The best plan is to weed out any plants that are not true so soon as the first flowers open, and save seed from the best and most vigorous growing forms; a select strain can thus be obtained even in one season, and it can only be kept true by growing the one variety and saving seed annually, from the spring flowering plants preferred. The true variety above-mentioned is a vigorous grower with broad foliage, and the spikes attain a length of 9 inches or more under good cultivation. It would be a great advantage to private gardeners to save seed themselves of any good annual plant they may possess and such as cannot be obtained true with certainty from other sources. Where numerous varieties have of necessity to be grown near each other for seed production, the inferior forms will seed most freely, and, worse still, the pollen from these becomes distributed to the better ones, and so causes their deterioration. Mignonette is a case in point. Let the above advice regarding it be put into practice and the results will well repay the extra trouble incurred.

J. G. K.

Thunbergia alata is a free-growing greenhouse or half hardy annual well worth growing. A friend of mine calls the white variety Black-eyed Susan, on account of the characteristic dark blotch in the mouth of the corolla. Seeds sown in February or March soon form flowering plants, and they may either be grown in baskets or used for fringing the fronts of shelves or staging in the greenhouse or conservatory. The white variety is, as I think, the prettiest, but there are also buff and orange kinds equally showy. There is also a pure white form without the black throat, which is very pretty. As companion plants for these Thunbergias nothing can be prettier than Maurandias, white, lilac, and purple, and they may be grown under the same treatment.—F. W. B.

Strelitzia regina.—This is really a handsome as well as a distinct plant, and one which is well deserving of more attention than it gets now-a-days, the more especially that it blooms in the dull season of the year. It thrives best in good turfy loam with some sand and a little leaf-soil, giving good drainage and potting rather firm. A certain amount of shade is necessary in summer, but this must not be overdone, or the growth made will lack solidity. Plenty of water at the roots without souring the soil, with abundance of atmospheric moisture during the growing season, is absolutely necessary, not forgetting a liberal admission of air in fine weather. The observance of these details will ensure a free, strong growth followed by a good show of bloom at the proper season.—J. C. B.

Rhododendron exoniense.—I have long been an admirer of the hybrid greenhouse Rhododendrons alluded to in the last number of THE GARDEN (p. 177), both on account of their size and markings of the flowers, and also their pleasing fragrance. As a rule they are of very straggling habit, and must either be trained to a wall or over balloon trellises, for both of which purposes it must be admitted they are well adapted. On a recent visit to Messrs. R. Veitch and Son's Exeter Nurseries I was much interested in a large batch of Rhododendron exoniense which this firm has raised, and am of opinion that it must eventually become popular wherever greenhouse plants are in demand. It is evidently as shrubby in habit as any Indian Azalea, and apparently quite as floriferous. That it fully merited the certificates of the Royal Horticultural and Botanical Societies there can be no doubt, and I consider THE GARDEN has done good service in bringing it still more prominently before the public.—W. I. M.

Mutisia decurrens.—In answer to "Veronica," allow me to mention that I have one plant of Mutisia decurrens planted three years ago in sandy loam outside small greenhouse facing south. It is now 4 feet high (I train it low), and covers 15 feet of trellis. I never prune it nor disturb its roots by digging, but am obliged to keep it within due bounds by supplying my friends with the offshoots. It flowers freely and looks perfectly

healthy.—ALICE F. MALCOLM, *Achnamara, Lochgilphead.*

THE PALM HOUSE AT KEW.

THE illustration below, reproduced from a photograph, represents a glimpse of the luxuriant tropical vegetation contained in the great Palm house in the Royal Gardens at Kew. The abundant space which this lofty and capacious hot-house affords admits of the plants being arranged so as to produce the most imposing effects, and we

border the greater bulk of the plants could be planted with advantage as regards their health, their appearance, and, not least, in the reduction of labour in their culture. Special grants of the needful have been far less profitably employed than would be the case were the money applied in remedying what we have long considered to be a drawback to the noble Palm house in this our great national garden.

Our illustration represents several of the most beautiful fine-leaved plants contained in the

fan-like foliage in the middle background is *Rhapis flabelliformis* with *Phoenix reclinata* in front of it. The *Calocasia*, *Pancratium*, *Calathea*, and *Eucharis* in the foreground are the other prominent features of this beautiful plant group.

FUCHSIAS IN WILTSHIRE.

THOSE desirous of seeing Fuchsias in perfection should visit the horticultural exhibitions held at Devizes, Trowbridge, Bath, Calne, and other



A corner in the Palm house at Kew.

are pleased to note that during the past few years far more attention has been paid at Kew with regard to the effective grouping of plants in the houses than formerly. Great improvements have been carried out in the Palm house in the matter of arranging the plants, but no really good result will accrue from any efforts bestowed upon it in this direction until the great obstruction to not only effective arrangement, but to the well-being of the plants, has been removed. To those who are familiar with the house we need hardly say that allusion is made to the perforated iron with which the house is floored, except in the central part, which part is really the only spot where the plants can be planted in free soil, and where they can be seen growing as luxuriantly as in the Tropics—a serious blunder by the designer of the heating apparatus of the house, and unfortunately one which would involve a considerable outlay to remedy. The alteration could without doubt be effected without in the least impairing the heating capabilities of the present apparatus. No one ever thinks of constructing a house now-a-days, especially a large one, with the heating pipes placed immediately beneath the pots and tubs requiring even in the depth of winter the perpetual application of the water hose. A border of deep soil, such exists in the central part of this house and in the noble temperate house in the adjoining part of the gardens, is what is required throughout the wings of the Palm house. In this

house. The plummy-leaved plant in the foreground, like a spreading mass of ostrich feathers, represents a fine example of the rare Australian Cycad, *Macrozamia Dennisoni*. Behind it to the right is its commoner relative, *Cycas circinalis*. The noble leaved Palm towering to the left above all the rest is the *Stevensonia grandiflora*, and immediately behind it is a grand specimen of the Ivory Palm (*Phytelephas macrocarpa*), one of the stemless section. On the opposite side of the illustration may be seen leaves of the elegant *Attalea Cohune*, also a Palm, while the mass of

neighbouring places during the months of August and September. It is an indisputable fact that Fuchsias are seldom presented in good form at the various horticultural shows held about the country. There are exceptions, but they are very rare. One comes into contact with the framework of plants, large and small, their branches too often sparsely covered with foliage; the main branches can be seen through the leaves, and the flowers are poor in character. At the exhibition of the Trowbridge Horticultural Society, held on Wednesday, August 20, there were classes for six

and four Fuchsias shown by gentlemen's gardeners, classes for nurserymen, and also for cottagers. I have no hesitation in stating that the plants shown by the latter were far in advance of what is seen produced by gentlemen's gardeners and amateurs at many provincial shows. The great majority of them were grown in the open air; they averaged from 2½ feet to 5 feet in height, were mainly of pyramidal shape, clothed with luxuriant foliage, overlaid with very fine flowers. These cottagers also had specimens of zonal Pelargoniums that would have done credit to the best London or provincial exhibitions. In the amateurs' classes for six and four plants there were four collections, and the worst were infinitely better than the best I had previously seen at any exhibition. The best six specimens were staged by the recognised champion Fuchsia grower of the west of England—Mr. James Lye, gardener to the Hon. Mrs. Hay, Clyffe Hall, Market Lavington. They were growing in 16-inch pots, were 9 feet in height, and 4½ feet through at the base; they were densely clothed with healthy foliage that came down to the very bottom of the pots, and literally covered with large clusters of flowers. The plants had a more formal appearance than some others that were staged in competition with them, but this is as much a necessity as anything, for Mr. Lye has to take his plants a considerable distance by road, and it is absolutely necessary that the flowering branches be tied in close, not only to prevent them from whipping against each other and so damage the flowers, but also for the convenience of transit in vans. As cultural specimens they were perfect. I may state that the plants were two and three years old each. Mr. Lye's best six varieties consisted of Final, the Hon. Mrs. Hay, and Doel's Favourite, dark varieties, the last named one remarkably free of bloom, though this is characteristic of all the Wiltshire-raised Fuchsias; Arabella, Mrs. Bright, and Beauty of the West were light, the two last varieties raised by Mr. Lye. Mr. G. Tucker, gardener to Major Clarke, Trowbridge, was second. The plants were broader than those shown by Mr. Lye, because grown in the immediate neighbourhood, and the same necessity for guarding against transit by road did not exist, but they were very good, and not a great way behind Mr. Lye's in point of quality. The varieties were Load-me-well, Charmer, Doel's Favourite, and Bountiful, dark; Arabella and Emily Doel, light. Third, Mr. H. Pocock, gardener to Mr. J. P. Haden, who had Bountiful, Charming, and Doel's Favourite, dark; and Maggie, Arabella, and Beauty of Wilts, light. Then in the class for four specimens Mr. Lye was again first, with Henry Brook and Duke of Albany, dark; Star of Wilts and Emily Lye, light—all his own raising. In this class Mr. Pocock took second place, having Elegance and Doel's Favourite, dark; Rose of Castile and Mabel, light. The third and fourth collections were both very good.

Really, there does not appear to be a great deal of difficulty about cultivating such splendid specimens. Some might be led to suppose that Mr. Lye has an abundance of glass under which to bring on his plants, but the fact is, Clyffe Hall is very deficient in this respect. The greater portion of the cultural process is done in the open air. About the third week in October the plants are cut back to the shape required. They are then kept dry for a week or ten days to check anything like bleeding of the sap; then a little water is given—just enough to encourage them to make about three-quarters of an inch of growth, as Mr. Lye states, to "save the old wood," meaning thereby to excite the sap sufficiently to keep the old wood alive and plump. The plants are then kept in a cold house, and but little water is given up to the first or second weeks in February, when the plants are turned out of their pots, the old soil shaken clear of the roots, and then repotted in a new compost made up by putting three parts of good loam with one part well decomposed cow manure, one part leaf-mould and peat, with a liberal addition of silver sand or rough sea sand to keep it all open. At the first potting the plants are placed in smaller pots, and they are shifted on

as required until they are in the blooming pots. About the first week in June the plants are placed out-of-doors on a sheltered border, and syringed during hot and drying weather every day to keep down red spider and encourage a healthy development of foliage; the leading shoots are stopped till about seven or eight weeks before the date on which the plants are required for exhibition, according, of course, to the requirements of the several varieties taught by experience, as some require more time than others to get into a good blooming condition. Liquid manure water is given; cow manure is preferred with a little soot added, and this is soaked in a tub eight or ten days before being used; a good dose is given about once a week. A rough framework is erected by Mr. Lye, and over this is stretched some floral shading, high enough to allow of full play to the tops of the plants; this shades from sun-heat, and also wards off ill effects from hail and heavy rains.

This is a very simple cultural process. Any gardener can carry it out if only his heart be in his work. There is no reason why better Fuchsias should not be grown than now exist. They can be had, and the cultural plan adopted by Mr. Lye is thus described in the hope that others may be induced to follow it. To those ambitious to excel in the culture of Fuchsias I strongly commend the Wiltshire practice.

R. DEAN.

Lilium lancifolium.—The several varieties of this lovely Lily are extremely well suited for amateur gardeners, as they require but little glass protection to bring their flowers out in the highest perfection. I know, indeed, several cottagers who have a fine display in autumn, made by plants grown entirely out of doors. The most successful method seems to be to repot as soon as the foliage dies down before winter sets in, using turfy soil and leaf-mould or rotten manure. The pots are then stored away in any shed or cellar secure from frost until growth commences in spring. They are then placed in a cold frame or under some other temporary covering on frosty nights, and as the days lengthen they are set out in open, sunny positions. Great care is necessary not to over-water them or to let them suffer from lack of moisture, for red spider, if once established on the leaves, soon spoils them. A good syringing after hot days is a great aid to them. When they show bloom the shoots should be securely fastened to neat stakes, but not too tightly, and if a cool glass structure is available, they will make a grand display if brought into it as the blooms are about to expand. All the varieties are good, but the best are album and rubrum; the first nearly clear white, the latter prettily spotted with red.—J. GROOM, Gosport.

Bouvardias.—All the varieties of Bouvardias are remarkably well grown in the Slough Nursery. Large quantities are grown in pots to produce a good display late in the autumn and winter months. The double white variety Alfred Neuner is a most valuable variety for all the purposes that these flowers are required, and in its way the double pink President Garfield is equally valuable. Vreelandi and Hogarth are amongst the best of the single forms. The best treatment for them during the summer and autumn months is to plunge the pots containing the plants in Cocoanut fibre refuse out of doors; they grow with great vigour, and if the points of the growing shoots are pinched out two or three times, the plants become well furnished with short growths, each of them in time to become furnished with a truss of flowers. Mr. Turner had planted a long bed with B. Humboldtii corymbiflora; they were old plants and are now well furnished with blooms, which are being cut daily in large quantities. They are quite in the open ground, but a light framework has been fixed on which to place some spare lights to protect them from heavy rains. Such quantities of snow-white flowers are very valuable at any time. Any old plants of the different species and varieties of Bouvardia that have flowered during the winter may be planted at the usual time for planting out bedding plants in the end of May or

early in June. A bed of them in a sheltered corner of the garden will furnish an abundant supply of cut flowers during July, August, and September.—J. DOUGLAS.

NOTES.

Fruity autumn.—The green turf beneath the Plane trees is strewn with warm russet-tinted leaves; the white Magnolia flowers glisten soft and white as a dove's breast among the glossy foliage; and the garden is lit up bright with the golden light of big Sunflowers and with the flame of glowing Torch Lilies. It is warm and light; although filmy cloud strata stretch like a veil between our garden and the sun. There is the faintest breeze stirring, and golden Aspen leaves flicker in the light, and a robin is singing its plaintive little song. The Pine trees exhale their freshest odour, and beyond the sombre Yew hedges the topmost orchard branches are enriched with golden fruit, and stand out clearly against the sky. The bees are busy at their harvest, and the wasps are clustering around the ripest of the early Pears and Plums on the old red walls. These rich, warm days in early autumn are most enjoyable—the more so, perhaps, because they are so rare.

"Consider the Lilies."—All those who are interested in Lily culture will be glad to know that Messrs. J. H. Krelage, of Haarlem, have just published a list of all the books, &c., containing coloured plates, engravings, &c., of these popular flowers. It is a good appendix to such works as Elwes' "Monograph of the Genus Lilium" and Dr. Wallace's "Notes on Lilies," and deserves the notice of all who wish to study the genus critically or to make references for garden purposes. Messrs. Krelage have done much good service in the advance of floriculture in all ways, whether practically or by way of literature, and we wish they would do for the Iris and the Narcissus what they have so well done and are doing for Queen Rosa.

Stock and scion.—A well-marked instance of variegation induced by grafting has been reported by M. Lemoine, of Nancy, to the Central Horticultural Society of France. The variegation occurred in the leaves of the stock after and in consequence of the engrafting upon it of a scion with variegated leaves. Two cases are cited, the stocks being different, the scion the same in both cases. The stocks were Passiflora Raddiana (kermesina) and Passiflora Impératrice Eugénie; the scions were of the variegated P. quadrangularis acubaeifolia. They were inarched, and consequently the branch of the stock above the graft was not cut away, but allowed to remain. From this branch above the graft branchlets were produced which bore variegated leaves; cuttings were taken from them, and the result is that two variegated varieties have been produced. M. Lemoine cites a converse experiment. A scion of Passiflora vitifolia (Tacsonia Buchanani) was grafted on a stock of the variegated P. quadrangularis, and has subsequently shown variegated leaves. These are excellent illustrations of the reciprocal influence of scion and stock.

Rosa sulphurea.—A lady, who has full right to be proud of a well-stocked garden, invites me every year to see her double white and lilac Colchicums and her hardy Cyclamens in bloom. They are in bloom earlier this year than usual, and lovely they are, hundreds of blossoms stretching in long lines beneath some gnarled old Apple trees. I sometimes think the reason that these rare double Colchicums do so well in this garden is because the ground whereon they grow is so full of tree and shrub roots that it is drier than usual, and so their bulbs get ripened better than is usual in most places. But this garden hath other treasures. It was here I first saw the old Celestial Rose; here also Rosa alba and its variety, the old Maiden's Blush, are quite at home. So also here I found a healthy bush of the old yellow Cabbage Rose, grown in English gardens for three centuries at least, but rare in most Rose gardens of to-day. I remember how well it used to grow at Burghley, where I first saw it years ago, but here it flowers

even better. Parkinson describes this Rose as long ago as 1629.

The Virgin's Bower.—No Clematis has a sweeter perfume, none other is more elegant in its growth and inflorescence than is this old favourite of long ago. Planted at the foot of a dead bush or over an arbour or near the pillar of a low verandah, and it will become a thing of beauty after many days. Since the advent of the new seedling Clematises of the large-flowered races, I am afraid that we have in some measure neglected the old species our grandmothers loved and grew in their quaint old gardens of days ago. Of all these, however, *C. Flammula* should have a place for autumn show, as also *C. montana* for its silvery stars in spring.

Big Sunflowers.—No annuals are more readily grown than are the varieties of *Helianthus annuus*, and no flowers are more pleasing, if properly used, for good effect. We have here a yard or enclosure surrounded by walls and pleached hedges, and in the centre is a large heap of manure and garden refuse which if left bare would not be beautiful. On this heap are Vegetable Marrows, and among them a few seedling Sunflowers were planted in May. These last are now most showy as seen over the hedges from a distance, and backed by grey Pine foliage and the sombre tints of Cypress and Arbor-vitæ. They are not so pretty if dotted about singly, but in great masses they are very effective just now.

Lathyrus tuberosus.—This is a very pretty Everlasting Pea of rambling habit, and which for most part of the summer and autumn months bears a profusion of bright rosy flowers in dense clusters all over its young growth. Once well planted at the foot of a hedge or at the base of a dead bush, it needs no further attention and forms a really beautiful object for several months in the year. It would look still more effective if mixed along with the pure white variety of *L. latifolius*, either as above recommended or planted on the turf where they could grow at their own sweet will together.

Hardy Ericas.—It is always a matter of surprise to me that these plants are so seldom seen at their best in gardens generally. Perhaps soil and climate may have something to do with it after all. For country places high up on the hills, and for the grounds surrounding shooting boxes where the soil is peaty or wherever natural Heaths grow, nothing else could be more appropriate than these shrubs in masses on the cool turf. Of the best now in bloom is *E. ramulosa*, a mass of deep pink bells; *E. stricta* and *E. Allporti* are also effective, and for a dense carpet none are better than the dwarf-growing *E. carnea* and its different forms. As seen in bold groups and masses they are most effective, and even when not in flower, their feathery growth contrasts well with Rhododendrons and other hardy shrubs.

Batatas paniculatus.—This tropical Bindweed is perhaps best known as a rampant and effective climbing plant in a large house, but it is amenable to culture in small pots, and cuttings of it taken off in March root freely and bloom well the same year. Nice little plants in 5-inch pots trained round a few stakes and grown in a sunny stove are very useful and effective, and the flowers show to better advantage as thus brought nearer to the eye than is generally the case. When the old tubers begin to sprout out in the spring quite large shoots may be rooted and potted off, and these soon begin to flower. This plant is also a good stock on which to graft *Ipomœa Horsfallii* and its white variety, although itself a plant of grace and beauty.

Scarborough Lilies.—Either as a window plant or as a greenhouse bulb, this old favourite has but few equals at this season of the year. We have two varieties, *Vallota purpurea* and the white-eyed variety known as *eximia*. They are now very showy, and will continue attractive for several weeks as the successional spikes open their flowers. So far, I believe, this fine old plant has defied all the attempts of the hybridiser, and that

numbers of such attempts have been made goes without the saying. I have never yet induced this plant to produce good seed, but shall try again this season. A white *Vallota* would be a useful plant for decorative purposes, and may not be an impossibility after all.

St. John's Worts.—Some of the best of the shrubby *Hypericums* are now beautifully in bloom, perhaps the best of all being *H. oblongifolium*, from North India, and *H. patulum*, from Japan. Both are readily increased by cuttings or by seeds, and should have a place in all good gardens. *H. uralum* (*H. nepalense*) is of elegant habit, bearing flowers golden like the last, but not so large. The large blossomed *H. triflorum*, from Java, is growing well with us this year, and has bloomed in a cold house, but not so as yet out of doors. *H. ægyptiacum* and *H. empetrifolium* are also pretty, as is *H. Kalmianum*. *H. reptans* is a gem for a rockery, as it loves to hang its golden blossoms over the stones and ledges at the end of red leafy shoots as fine as threads of copper wire.

VERONICA.

FRUIT GARDEN.

AUTUMN TREATMENT OF FRUIT TREES UNDER GLASS.

I BELIEVE it may be safely asserted that not a few cultivators overlook the importance of, and the necessity for, closer attention to the requirements of various kinds of fruit trees and Vines after the crops have been perfected. For several seasons I have been paying extra close attention to this important subject, and, after various experiments, have arrived at the conclusion that it is impossible to grow really fine fruit on trees that have been much neglected any time from the fall of the leaf to the time they are blooming again; in other words, that more depends upon the size and perfect formation of the bloom buds than we, as a rule, are aware of. According to my experience, the size and shape of the future fruit is more determined by the autumn treatment of the trees or Vines than by the treatment given when the fruit is swelling off. Large and perfect flowers or bunches of flowers may with ordinarily good treatment be grown into large and perfect fruit or bunches of fruit as the case may be, but undersized or malformed blossoms cannot by any treatment be grown into full-sized, handsome fruit. If any proof of this is required, I need only direct your readers' attention to the state of too many Apple, Pear, and Plum trees this season. Where the strongest and best formed flowers escaped destruction by frost, there are to be seen good crops of fine, well-shaped fruit, but where these were destroyed, the small, late, and in many cases imperfectly formed blossoms were followed by correspondingly inferior fruit. A superficial observer might naturally form the opinion that a strong, healthy fruit tree with only a small quantity of fruit set would swell these to a great size, but no such thing occurs, unless, indeed, such fruit resulted from the best formed flowers. To a certain extent Dame Nature determines the quantity and quality of our outside fruit crops, but the case is very different under glass, as here we are in a position to be more independent of climatic changes, and if we fail to grow good fruit it is usually our own fault.

GRAPE VINES, PEACH, NECTARINE, AND FIG TREES in particular should never be allowed to become quite dry at the roots, as a few days' neglect in this respect, especially during such hot weather as has lately been experienced, may be most detrimental to the next season's crops. Not only should all these be kept regularly supplied with water in order to insure a perfect formation of buds, but they should also be given liberal supplies of liquid manure, this assisting the trees or Vines to recoup their strength after the exhaustive maturation of the crops. In most cases the root action is going on more briskly after rather than before the cessation of active top-growth, the whole aim, if I may so put it, of the plant being to store up as much food and to produce as many root fibres as possible to begin

active life with afresh the following season. If then, we allow the foliage to become badly over run with spider and other pests—these oftentimes being the natural consequence of neglect at the roots—and do not encourage the formation of plenty of fibres, we seriously injure our future fruit prospects. Many complaints are annually heard of the Peach and Nectarine trees under glass dropping the greater portion of their blossoms in the spring, and in most cases this is entirely due to either extreme poverty or dryness at the roots during the autumn and early winter months. We are not all in a position to easily flood our borders with water, but most of us can contrive to give frequent and moderately heavy soakings, and that is all that is necessary. The less water available the more need for frequent applications. This at first sight may appear inconsistent, but I find that if we anticipate dryness, a moderate supply of water is sufficient to thoroughly moisten the whole border; whereas when once a border gets thoroughly dry it requires a great amount of water to moisten it again, and much runs away without doing a proportionate amount of good. After our trees have been cleared of fruit, the borders are cleared of the litter mulching, have the surface very lightly broken up with a fork to prevent cracking, are given a good soaking with diluted farmyard liquid manure, and are then finally heavily dressed with half decomposed farmyard manure, surfacing this over with the straw litter in order to prevent its becoming dry. More water is given whenever the borders approach dryness, and the engine is freely used on the trees in the later houses, especially during hot weather. In the early house the foliage is now well coated over with flowers of sulphur; this being first worked into a paste, which in this state mixes freely with water, can then be readily applied with a syringe. The sulphur effectually destroys or keeps the red spider in check, and is less prejudicial to the early ripening of the trees. The results of this attention to the requirements of the trees are plenty of healthy surface roots, well-matured growths, and plump buds, followed by abundance of healthy blooms and fruit. This season we had an example of what may be expected when trees are not kept properly supplied with water. We usually partially lift a few of the trees every season, replacing much of the old and exhausted soil with suitable fresh compost. Last season, when we had undermined one tree rather more exposed than the rest, we found it was excessively dry at the roots, more especially near the stem. We at once formed a large basin in the soil round the stem, next pierced the soil with a pointed iron rod, and eventually succeeded in thoroughly moistening it again. This spring but little of the bloom fell off prematurely, though unfortunately few of the blossoms were full sized or perfect in form, and instead of the tree perfecting the usual heavy crop of fine fruit, the crop was almost worthless. Cracking and imperfect formation of the stones, followed by premature ripening or bad-shaped fruit, are also, I believe, the results of neglect during the autumn. The "yellows" are not always consequent only upon too deep root action, but may be the result of poverty and dryness at the roots.

FIGS.—If these are similarly neglected, they cannot be made to swell their first crops to a great or full size. Some of the fruit may hang on and ripen, but if small when in an embryo state, I find they cannot be induced to swell out properly; in fact, the varieties, owing to the bad autumn treatment, are sometimes unrecognisable when fully ripened. Give well-established trees a good autumn mulching of decayed manure to root into and plenty of moisture, and an abundance of fruit will result. If fed too liberally in the early part of the season, undesirable grossness is almost certain to follow, but the autumn feeding, however, will not thus be worse than wasted. Our largest, if not the best flavoured, Figs we gather are grown in the late Peach house, the trees being as liberally treated as the Peaches, while the smallest fruit is gathered in a house where much less liberal autumn treatment has hitherto been given. Fig trees in houses should have their

growths freely thinned out, all late formed fruit which will neither ripen this season nor next should be removed, plenty of air and water given, and the result will be an abundance of embryo Figs this autumn, many of which will have to be removed next spring if good-sized fruit are required. The Brown Turkey is the favourite variety, and it is thought there are superior forms of this, some being more certain to perfect good first crops than others. It is not, however, the particular variety that is in fault, but more the treatment given. Well-established trees planted near buildings or open walls very rarely fail to bear well, providing these are protected from severe frosts. Many such trees are growing in poor, hard, and dry soil, but they invariably get plenty of moisture at the roots during the late autumn and winter months.

GRAPE VINES, I repeat, also must have plenty of moisture given them, and, in fact, require as much at this time of year as at any time. Outside borders most probably are now getting plenty of moisture, but those Vines rooting inside should receive frequent waterings and occasional strong supplies of liquid manure. This will encourage the formation of plenty of fibres, and in various ways lay the foundation of a heavy crop next season. It will be found on examination that they are now rooting freely, and where a good mulching has been given and moisture abounds they will have found their way up into this in all directions. No drying off at the roots should be attempted, but if the Vines are not ripening properly, plenty of air should be given and the fire heat turned on. Much of the sub-lateral growth should also be removed, as this serves no good purpose, and may divert sap that might be better employed.

W. I. M.

FOXY GRAPES THE BEST FLAVOURED.

It is, I think, universally admitted that a bunch of Black Hamburg Grapes is in perfect condition for the table when the berries are jet black and the bloom perfect. That this is so is abundantly exemplified at every exhibition, for except where a prize is offered for the best flavour, Grapes are never tasted, the size of the berries, the size and build of the bunch, and, above all, the finish being the only qualities taken into consideration. Now, I would submit that what is commonly known as high finish, is not a necessary concomitant of high quality, and that the latter is quite as often found in fruit that is known as foxy in colour, the skin of the latter being thin and almost as delicate as the flesh of the Grape. Of course it will be understood that I only refer to Hamburg Grapes, as those intended to hang late must have skins of more or less leathery texture. Would it not be a sound standard to set up that, in its class, the Grape in which the greatest amount of saccharine matter is present is the one that gives evidence of the highest culture? If this be so, are not our prize Grape growers sacrificing quality at the shrine of beauty? One thing that confirms me in this opinion is that strong light and sunshine, which are always understood to be essential agents in the perfect ripening of fruit, are not conducive to the development of high finish in Grapes, the most favourable conditions for this being a moderately cool temperature and comparative shade. In one of the many vineries which I have visited in the course of this summer I noticed a striking proof of the truth of this theory. In one case Black Hamburg Vines, planted against a back wall about fifteen years ago when the house was erected, have been taken down the rafters, and while the bunches on the back wall were fairly well coloured and bloomed, those on the same Vines on the rafters were quite foxy. The wood on the back wall is still quite green, and that on the rafters is brown and hard. The grower was anxious to have the Grapes all black, seeing that he got 2s. 6d. per pound for the back wall bunches, whereas he had some difficulty in getting 2s. for the imperfectly coloured ones on the rafters, though these were of far better quality. This example seems clearly to

prove that the colouring of Grapes is more dependent on atmospheric conditions than on the constituents of the border, coolness and shade, as I have observed, being the chief requisites. It is well known that Grapes that have once been perfectly black will, if allowed to hang long enough, lose that deep colour; is not, therefore, this paler shade associated with more perfect ripeness?

SCOT.

GLASS COPINGS FOR VINES ON WALLS.

I AM not an advocate of fixed glass copings for fruit trees on walls, for the simple reason that the tops of the trees suffer from red spider and other insect pests, especially during hot, dry summers like the present, so that the benefit derived from the protection in spring is counterbalanced by loss of health in summer. I am well aware that with the same amount of attention that fruit trees get under glass in the way of daily syringings, &c., the trees can be kept healthy, but, as a rule, labour is not so liberally allowed for the wall trees as it is for the glass department; consequently, fixed copings that keep off rain and dew have never yet been so popular as was at one time anticipated, but movable copings that can be easily put up or taken down are decidedly great aids to the fruit grower. But the maxim that there are no rules without exceptions holds good in this as in other matters, for I lately came across a fixed glass coping doing excellent service, and one which I fancy many might copy with advantage—I mean by utilising them for sheltering and hastening the ripening of Grapes on walls, for there can be no question as to the possibility of having really good Grapes in autumn of several of the harder kinds, in addition to the other wall fruits, as the Vines will luxuriate close under the glass and utilise that portion of wall space that one frequently finds but very imperfectly furnished with fruitful wood. In the case alluded to a fixed glass coping had been placed over a very large Pear tree (Beurré Diel) which the owner prized very much, and by the aid of his glass coping and double fish-nets laid down in front, both as a protection against spring frosts and the attacks of sparrows destroying the buds, he usually had some fine specimens of this delicious Pear. Now, at one end a shoot from a neighbouring Vine was allowed to run along close under the glass, and, getting well ripened by the solar heat, it was left at full length, and in due time produced a splendid crop of fruit that promise to ripen sooner than the majority of cool house Vines, as they are too frequently planted with sorts only suited to heated structures. Now, I feel sure that many who have fixed glass copings could run up single canes of Vines at wide intervals and allow them to extend right and left in cordon fashion under the glass, and thereby utilise the heat to good purpose, for there is no difficulty in keeping the Vine healthy under glass copings or coverings provided the roots are well cared for. We have some houses in which the foliage has not been syringed once this year, yet they are as green and luxuriant as needs be, for the roots have had plenty of liquid, and close by the heat and drought has already defoliated many trees and shrubs; at the same time a good washing with the garden engine will doubtless be found to invigorate Vines as much as other wall fruit trees. Of course the thinning, stopping of laterals, and other details of culture will need more attention than Vines on open walls usually receive, for I need hardly say that where this is afforded them really nice crops of the hardest kinds of Grapes are grown in all sorts of seasons on open walls without any glass coping or protection whatever. Open wall Grape culture has of late years received but scanty attention, and the failure of the Vines to perfect their crops is usually set down to deterioration of climate, but I cannot help thinking that the failures might with more justice be set down to the lack of attention bestowed on them, owing to the pressure of work in gardens in early summer, as the increase of glass houses and the ornamental branches of gardening allows but little labour being bestowed on the kitchen

gardens and wall fruits, for I invariably find the best examples of these homely old-fashioned fruits in gardens in which the onward march of improvement has not been so rapid as to destroy all old customs. I could give numerous examples, but perhaps one will suffice, viz., at Weirton Gardens, near Maidstone, I never saw a failure of open wall Grapes, Black Hamburg, Foster's Seedling, Muscadines, Sweetwaters, &c., finishing off bunches that would do credit to many vineries, simply because the gardener, Mr. Divers, bestowed especial care in training young canes in every year, stopping the shoots, keeping an even, regular spread of foliage, and other details of culture that are usually put off until too late owing to over-pressure in gardens. But I feel sure that anyone having glass copings to aid their wall Vines, and the available labour to bestow on them at the right time, will find a better return than from many wall fruit trees, for the Vine under good cultivation never fails to produce far more bunches than are required for a crop, and as they are late in starting into growth spring frosts rarely affect them. In this locality there is no difficulty in having good crops on open walls, but with glass copings they might be grown over a wide area.

Gosport, Hants.

JAMES GROOM.

Black Prince Strawberry.—It is quite probable that "E. B.'s" estimate (p. 191) of this Strawberry may be correct under the conditions he has seen it grown, but it does not apply to all places. He may be surprised to learn that I have grown and forced the Black Prince for twenty years, and always had magnificent crops of fine fruit, the berries often reaching a diameter of 2 inches on forced plants only moderately thinned, while all the others were of a good enough size for any dessert. We grow it as the Fillbasket kind, employing Vicomtesse Héricart de Thury along with it, but the Black Prince is always the earliest and most prolific. In numbers of instances I have been asked for the name of it by friends of my employers who have eaten here in April. Of course the fruits were nice and ripe, often nearly black in colour. I have a large quantity of it now in pots with crowns about the size of my thumb in length and thickness, and these are the kind of plants that produce good fruit. Black Prince does not do much good in dry, warm soils, and is more popular in the north than in the south. Like any other variety, it produces small berries from the latest flowers on the truss, but these are picked off in forcing. Outdoors all are useful, and the quantity of fruit one good crown will produce is something fabulous. On the other hand, La Grosse Sucrée, which "E. B." praises, is a failure here indoors and out. In our cool and rather heavy soil in which the Black Prince is constantly fertile La Grosse Sucrée produces immense leaves and very little fruit. I have discarded it for pot culture and have not extended it outside, and will probably dig it down altogether next year. Strawberries are good, but only when you can get enough of them. I am not the only one who grows Black Prince hereabouts instead of the old Keen's Seedling, which never bears.—J. S. W.

SHORT NOTES.—FRUIT.

Duke of Buccleuch Grape.—Mr. Wallis, the gardener at Keele Hall, evidently knows how to bring out the finest qualities of this superb Grape, as three bunches of it exhibited by him at the Shropshire show the other day were most perfect specimens, being large in berry, fine in colour, spotless, and grandly finished.—CLMBRIAN.

Prolific Gooseberry.—From Mr. E. Molyneux, Swanmore Park, Bishop's Cleeve, we have received a branch of a Gooseberry tree absolutely loaded with fruit, and Mr. Molyneux states that it is a fair specimen of the condition of all his trees. Gooseberries have been a fairly good crop in most places this year, but we have seen none so heavily cropped as the branch in question.

Speedwell Gooseberry.—Those who wish to have Gooseberries of uncommon size should grow this variety. At the late Shrewsbury show I saw a capital dish of it shown as one of the dishes in a prize collection of fruit exhibited by Mr. J. Lambert, gardener to Colonel Wingfield, Onslow Hall, Shrewsbury. To describe them as being like pullets' eggs is not overstating their size; their colour was fine and the flavour good.—J. MUIR.

FLOWER GARDEN.

PERENNIAL LOBELIAS.

Few plants, if well cared for and grown in masses or groups, are more capable of contributing to the beauty of autumn gardens than perennial or herbaceous Lobelias, and although a little fastidious as to position, very little management is needed in order to have them in perfection. They exist in most gardens in some form or other—from *L. syphilitica* and its numerous varieties to the handsome *L. splendens*—and although from various causes we do not always see them in the perfection which they are capable of attaining under liberal and proper treatment, enough is evinced to enable us to recommend their more general cultivation. The localities in which *L. cardinalis*, *L. splendens*, and others are found wild are generally moist, boggy, and wet places, and the absurdity of growing semi-bog plants in dry, sun-burnt positions will be at once seen. Our experience with Lobelias of this class in bogs and damp, partially shaded positions has been so far successful. They are said to be tender, but we have had no trouble with them in that respect. In winter we simply scatter a few ashes or Cocoa-nut fibre

late, tapering to both ends, irregularly serrate or serrulate, lower bracts leafy, tube of calyx and capsule hemispherical, much shorter than the subulate linear lobes; tube of the corolla about an inch long, the intense red of the corolla rarely varying to rose or even white. This species differs distinctly from *L. fulgens* in being devoid of pubescence, and also in having the divisions of the lower lip obtuse instead of lanceolate or acute. A very useful and showy plant, and one capable of improvement at the hands of florists.

L. SPLENDENS.—More slender than the above, glabrous or nearly so; leaves lanceolate or almost linear, glandular denticulate, all but the lower sessile.

Under this species I am inclined to place the variety *igneae* and the so-called *Victoriæ*; the former I take to be a good cultivated splendens; the latter the variety of splendens figured in the *Botanical Magazine* (t. 4002)—both very handsome and desirable plants. The plant represented by the annexed illustration is generally called *L. hybrida*, and is acknowledged to be the offspring of *L. syphilitica* on the one side, and either *L. fulgens cardinalis* or splendens on the other—probably the former, because the same plant has been long known in gardens as *L. fulgens* var. *violacea*, *L. speciosa*, and *L. Milleri*. The colour of the flowers is a beautiful violet, seemingly combining the bright red of fulgens with the rich purple of syphilitica. *L. fulgens* is a handsome, distinct, and striking plant; it differs considerably from all the others in having revolute margins to the leaves, and in the whole being downy and with a reddish instead of purple stem. K.

Golden Barton.—This annual appears to have rather exceptional powers of resisting drought. During the late hot weather it continued to bloom uninterruptedly, not showing the least signs of distress. This is an old plant, but one which for some years appeared to be almost lost sight of. The flowers are large, of a bright golden yellow, with a large bunch of stamens in the centre much in the way of the St. John's Wort; the foliage is elegantly formed, and the whole appearance of the plant very distinct. For summer blooming the seed should be sown about the middle of May in well enriched and deeply stirred soil, and the plants will then continue in flower up to the middle of September.—J. C. B.

Funkia subcordata grandiflora.—This plant is quite hardy on many warm dry soils in mild localities, but as a pot plant in a greenhouse or conservatory it is most beautiful. It reminds one of *Eurycles australasica*, but it is a good deal more handsome in leaf and blossom alike. As a companion window plant with the old scarlet Scarborough Lily (*Vallota*) it is unique, and yet, if I am not mistaken, it is a rare plant in most gardens. The flowers are borne in succession on a leafy spike 12 inches to 15 inches high, pure white and deliciously perfumed. A good pot of its roots ought to find a place in every greenhouse, as but few indoor plants now in season rival it in beauty or in fragrance.—VERONICA.

Disemma Hahni.—This exceedingly pretty white Passion-flower seems, like its relatives, the *Tacsonias*, happiest in the open air during the growing season. A specimen which had rooted through its pots into a border beneath inside the front of a plant house was in the spring drawn through at the side of a swing light, and tied at full length to the shooting; the result is that nearly every joint on the new pendent growth furnishes a flower, some of which are succeeded by fruit, while other plants treated exactly the same, but entirely under glass, yield scarcely a bloom. The leaves of this species are peltate, thus differing from any other of the family with which I am acquainted.—J. M., *Charmouth, Dorset*.

Japan Pinks.—These do not appear to be so well known as Indian Pinks, from which they differ principally in size of blooms, which are larger, and consequently more imposing in appearance. The colours vary from deep crimson to pure white in both the single and double varieties, the latter being quite as large and as double as the common Pink. Sown in a frame or under a hand-light in March, they are ready to plant out in May

and make good blooming plants by August. They will flower earlier than this, but it is better to pick off the first buds that form, which causes them to branch, and the flowers come larger and better than when allowed to bloom so early, as they get firmer root-hold. There is no particular difficulty about the culture of these Japan Pinks; but if they become very dry at the roots they are apt to get into a knotted condition, from which it is difficult to remove them.—J. C. B.

PLANTING DAFFODIL BULBS—A HINT.

It may interest "Veronica" to know that we have been planting Daffodils now for several years, and that they have always been planted in October or November (bought bulbs), and have invariably bloomed first-rate the year after, and then gone to grass, comparatively speaking, every season afterwards, and this, too, in the sunniest situations. This refers to all the sorts except the common yellow double kind. I do not think the time of planting makes so much difference if the bulbs be ripe, because I have often seen *Narcissi* potted for forcing in October and forced into flower soon after Christmas succeed well. I put out a quantity of Emperor, Empress, Horsfieldi, and others last December, the ground not being ready sooner, and every root flowered beautifully, and produced seed-pods that looked as if they would fill, but they withered off during the hot dry weather in June. A good large patch of the Hoop-petticoat, planted in November, was a mass of flower, while the one or two-year-old plantations flowered but sparingly. I am, however, going to turn over a new leaf in planting, and the following hint will maybe be of some service. In the wood nursery here a few years ago a large quantity of double *Poet's Narcissus* was planted, and for quantity of fine flowers produced they beat anything I ever saw. Just over the wall, in our hardy border, they do not flower half so well, and the only difference between the two plantations is that our garden bulbs were planted 2 inches or 3 inches deep; whereas in the nursery, being planted by one who was not a gardener, they were hardly covered over, and for years the solid crowns have been exposed summer and winter just like Shallots, and with the result mentioned. Undoubtedly the exposure both ripens and hardens the bulbs, but at all events the roots have developed amazingly since planted in small lots. This is a better plan than lifting the bulbs annually, but it bears out the idea that lifting may help to ripen them. The common plan is to plant deep, but I am now going to plant on the surface, and I would recommend others to do the same for trial at least. Some of the masses in the nursery alluded to are now a foot across, and one hard black mass of bulbs quite clear of the soil. The soil is hard, shallow, and not very rich, but there is no deterioration in the flowers. J. S. W.

SHORT NOTES.—FLOWER.

Crinum Powellii.—This is a noble plant which I noticed blooming in the College Botanical Gardens at Dublin last week. Its great rosy lily-like blossoms are borne on a stout scape 2 feet in height. What is the history of this plant, which I never saw in flower before? It luxuriates in the open border apparently, and rivals the *Belladonna Lily* in size and beauty.—S. L.

Sagittaria sagittifolia fl.-pl.—I agree with all "W. E. G." says in praise of this charming plant. In the centre of a large mass of it here it has this year shot up a spike of single flowers. It has been growing where it now is for several years, each year increasing in size and quantity of blossom. Is it usual for it to revert to the type? Amongst other species in the same pond is *S. variabilis*, a pretty plant with elegant foliage, but small single flowers.—J. M., *Charmouth, Dorset*.

Variegated Bindweed.—In reply to "J. C. B.'s" question, allow me to tell him a variegation of the Bindweed originated in the garden here five or six years ago, and every year since has put in an appearance. I enclose some of the bine. The leaves are marbled and blotched with pure white, and has the same unfortunate tendency to spread. *Convolvulus arvensis* I have often found variegated, but in the absence of a clay soil have failed to establish it.—J. M., *Charmouth*.

* The specimen sent has the leaves conspicuously blotched with creamy white.—Ed.



Lobelia hybrida; colour violet-purple.

over the crowns so as to protect the young growths from early spring frosts, and they succeed satisfactorily. Where a large stock is required early spring is the best time to lift the roots, which may then be divided into as many crowns as are needed. They should be potted singly in small pots, and, where convenient, placed in a little heat until they begin to grow. They will flower freely the following season, and have much finer and larger flowers than those left undisturbed. They may also be raised from seed, which they ripen freely.

VARIETIES.—For garden purposes, *L. fulgens*, *cardinalis*, and *splendens* are about equal in merit, and it seems a waste of time to separate the three. Dr. Gray in his "Synopsis" describes the two last as distinct species, and no doubt they are in a wild state, but their garden descendants under good and careful cultivation are difficult to distinguish; indeed, in some instances, almost impossible. We have received seed of *L. splendens* true from the banks of the Arizona, California, and the produce of this is very distinct from that found in gardens, answering in all particulars to Gray's description; but when we take *igneae*, and compare it with some of the varieties of *cardinalis*, the line of demarcation is hard to draw. The following is Gray's description:—

L. CARDINALIS.—Minutely pubescent or glabrous, 2 feet to 4 feet high; leaves from oblong-ovate to oblong-lanceolate.

Eulalia japonica.—There are three forms of this elegant and robust-growing Grass, the green, or the type, the striped, and the barred, the variegated, and the zebra striped. All are free growing, hardy, and well worth a place in good rich light soil in positions where they can develop themselves. In good soil they grow 5 feet high and flower, *i.e.*, bear their grassy plumes quite freely. The two variegated forms make very graceful plants for pot culture if grown in heat or in a cool house, and they are also useful as furnishing bright and graceful foliage for indoor floral decorations. Plants grown in a little warmth in 5-inch pots make the most graceful of plants for dinner-table decoration, but it is as a hardy plant that this beautiful Grass is most valuable.—F. W. B.

Senecio pulcher.—"S. W.," in a recent issue has condemned this plant as one "of the biggest cheats" and "marked it for the rubbish heap." I do not know his soil, treatment, or climate; any or all of these may be unsuitable; but lest his condemnation may influence others, I send my experience of it. Here, in a deep soil and in a rather moist situation, it thrives winter and summer on the open border, and at this time I have several vigorous specimens. I have just measured one of them. It is about 3½ feet in height, with twelve branches, covered with flowers and buds (from three to eight on a branch), large, perfect, and healthy. The flowers are more than 3 inches across, and in colour all that could be wished.—T. H. ARCHER-HIND, *South Devon*.

Spiræa palmata.—I have this finely in bloom. Its colour is quite unique, and the plant altogether is very distinct. To have it really good, it must be planted on a partially shaded situation where there is plenty of moisture, in which all the Spiræas revel, and never do well without it. It is the same with Phloxes of the herbaceous kind; but, instead of shade, they require full sun, as without such exposure they grow weedy, and the flowers lack texture and size. Those who desire to see them fine will find it a good plan to mulch round the plants and then water them with liquid manure, giving a thorough soaking at least once a week if the weather proves dry. This will be a great help to them, and will not only render them larger and better, but make them last longer in bloom.—D. S.

Sir Watkin Narcissus.—The simple fact of this, the finest of all the Peerless race, having lingered in Welsh gardens unseen and unheard of generally for fifteen years is very suggestive. Its origin is unknown. Can it have been one of the late Mr. Leeds' seedlings which somehow or other crept through the hedge or over the garden wall? At any rate, the fact of a noble plant like this having escaped observation so long ought to teach Daffodil lovers a lesson. We must next year organise a pilgrimage instead of, or as a prelude to, a conference, and explore old out-of-the-way gardens in search of these beautiful waifs and strays. In some old Irish gardens *N. cernuus* and *N. eystettensis* grow by the thousand, and many other old kinds may yet linger there, as in Wales, unheard of by the multitude. A Daffodil pilgrimage next spring might be set afoot, or members interested could search their own locality and send the results to a central committee in London on any day in March or April.—F. W. B.

The white Lily (*L. candidum*) has been grand this year, and to see it, as it is here in cottage gardens in such abundance, makes one wonder how it is that some growers have such difficulty in managing it; but then the soil in this district is sandy and naturally well drained, which may account for the plants doing so well. The bulbs seem to increase and gather strength when left undisturbed. In a clump at which I was looking a short time back I counted on one stem twenty-three fully-expanded flowers, and there were several others with nearly as many. *L. auratum* has a most provoking habit of dying out and getting weaker, which is not only the case here, but must be the same in most places; or what becomes of the vast numbers annually imported, which, if only half lived, would have stocked every

garden long ere this in the kingdom? Some say they like peat, and others that they must have loam and sand, and be planted in full sun; but whether in peat or loam, sun or shade, it is all the same; they vanish.—S. D.

Yellow Carnations.—"Why not try to raise a good yellow border Carnation" (*vide GARDEN*, p. 151)? Well, Messrs. Veitch's list contains eight new yellow Carnations, all of which I saw in flower in their Chelsea nursery. They seem to be quite a new type of border Carnation, and are so dwarf and floriferous, that a constant supply of cut flowers may be obtained from a very few plants of them; 140 flowers and buds were counted on a single plant of *aureus floribundus*. The whole of them were growing with great vigour and producing a large quantity of layers. The object of seedling raisers should now be to obtain flowers of a deeper yellow colour. The old yellow ground Picotees were of a deep yellow with distinct red edges. We must try to raise as good flowers as those that have unfortunately been lost to cultivation. The material is now ready to our hands, and the plants have good constitutions, which the lost flowers had not.—J. DOUGLAS.

Ageratums.—Mr. Barron has planted out at Chiswick, in one of his trial beds, some dwarf bedding Ageratums. Among them are *Malvern Beauty*, a kind very dwarf and compact in growth, colour bluish lavender, and extremely free of bloom; improvement is a variety that should have the negative placed before its name, for it has a loose branching growth, throwing out its flowers on horizontal stems beyond its growth, and sadly in want of compactness; colour, clear mauve; *Camellia*, also a dwarf growing form to all appearance, but the plants here were of various growths and colours, mostly compact, and in a few cases very dwarf. The flowers were dark mauve colour, and thrown too far away from the foliage to be effective. Thus *Malvern Beauty* is decidedly the best, and in order to ensure a perfectly uniform character in the plants it should be propagated by means of cuttings. In early spring a plant kept through the winter will supply many young growths from which cuttings can be made and these strike readily in heat. A little seed of a good dwarf variety of Ageratum may be sown, and if a good type is produced, this can be increased by means of cuttings.—R. D.

Delphiniums.—These have flowered well this year; they make a fine display in front of Evergreens, towering up, as the tall sorts do, some 5 feet to 7 feet high. Of late there have been many new varieties raised, the flowers of which vary through the many shades of blue to deep purple, and there are also some double kinds that are very showy and good; these latter can only be increased by division, which is best done in the spring just as the plants start into growth, but the singles may be raised from seed, which they bear abundantly. The time to sow this is as soon as it is ripe, by doing which a season is saved, as plants got up during July or August will flower well the year after. To get the seed to germinate quickly, the way to treat it is to prepare a bed of fine light soil on a border, and having pressed the surface level, and marked the size of the handlight, the seed should be sown regularly over the space and slightly covered with sifted earth. If afterwards kept close and occasionally sprinkled with water the young plants will soon appear, and should then have air by tilting the top of the handlight, which, after a week or so, may be removed altogether.—S. D.

Watsonia angusta.—This, mentioned in the "Journal of the Royal Horticultural Society" under the name of *W. fulgida*, and in the *Botanical Magazine*, t. 600, under that of *W. iridifolia* var. *fulgens*, has rather deviated from its general mode of procedure this season; at least in none of the periodicals given is mention made of its being bulbiferous, which it is with us this season. Although not generally considered to be hardy enough to stand out of doors, the plant in question was planted in the open border three years ago,

and this summer it has sent up three spikes of its large dull scarlet flowers. On the nodes or axils where these were produced, instead of the ordinary seed-pods, large clusters of small bulbils are produced; they vary in number from six to twenty-four, and in one or two places where the pedicel has elongated, or a new branch or side-shoot has formed, these numbers are nearly doubled. They are produced only on the lower part of the flowering stem, from four to six joints at the extreme points being free from bulbils, but in a fair way to produce seed. The others are all bulbil-bearing, and even at the very base of the first leaf-sheath and where no flowers were produced a small cluster is forming and already bursting through the keel of the leaf at its base. This plant is a native of the Cape of Good Hope, and may be easily grown without shelter.—K.

Clematis montana and Flammula.—These beautiful climbers seem to be becoming superseded by their more showy rivals of the Jackmanni type, yet they will doubtless again become popular, for their merits cannot be long overlooked. I have lately seen some beautiful effects produced by allowing *Clematis Flammula* to ramble at will amongst other climbers, and nowhere does it show itself off to greater advantage than when used as a screen to cover old unsightly walls or fences; indeed, the more irregular its mode of growth the more natural it looks. We have an old fence covered with vines of ornamental kinds, Jasmines, and similar plants, and amongst them an old plant of *Clematis Flammula* is allowed to run freely, pushing out a large shoot here and there, and now when covered with myriads of tiny blossoms the effect is particularly good. I may also mention that as a climber for covering old tree stumps or bare stems of living trees, there is nothing better than *Clematis Flammula*. *C. montana* is also equally good for any of the purposes just mentioned, and also as a wall climber; it produces its pretty clusters of little rosette-formed flowers early in the season when pruned in quite close to the wall, but the beauty of climbers is so greatly enhanced by permitting them to hang in natural garlands and festoons, that anyone wishing to have them in their best condition should beware of too close spur-like pruning.—J. GROOM, *Gosport*.

Semi-double Dahlias.—There is always a tendency to jump from one extreme to the other, and we see this exemplified in the case of Dahlias, which afford as great a contrast between the double and single forms as it is possible to conceive. But a little time ago a single Dahlia was a rarity; now they are the popular flowers of the day, and perhaps by an easy transition we shall presently come to find the greatest beauty in the semi-double forms. I am inclined to think that they are amongst the flowers of the future, and that as effective garden flowers they will stand far ahead of both doubles and singles. Some time since a friend brought me a large-flowered Dahlia, a glowing orange-scarlet, having three rows of petals. I thought I had never seen anything more striking; I certainly never remember to have seen anything so brilliant amongst double Dahlias as this semi-double variety. I would earnestly beg of raisers of double Dahlias to give the flower-loving public the opportunity of deciding on the merits of the semi-double large-flowered varieties. Many a fine sort has undoubtedly been cast away because it so nearly approached the typical form, but now that the single kinds are so much thought of, the semi-doubles would stand a good chance of getting a trial as decorative kinds. I feel sure that if Mr. Cannell or someone having the opportunity of bringing them into notice would select a dozen good distinct telling shades of colour, they would soon find favour and become favourites for open-air decoration.—J. C., *Byfleet*.

Tiger Lily growth.—Your favourable notice (p. 193) of the Lilies I showed at South Kensington on the 26th ult. makes me ask for space for a note on them. I wish you could have seen them growing; they were the finest specimens of their species I have ever seen. So though at risk of in-

jury to their bulbs I cut them for the committee, alas, owing to several casualties in transit, they were considerably shorn of their fair proportions before getting to Kensington; jolting cabs knocked off several of both flowers and buds, and while stopping to show them to my friend Mr. Grote on the road their bottle upset, which added to the damage. The *L. tigrinum* fl.-pl. was about 8 feet high; it had a fine head of many large flowers. We have several beds of this Lily in our wood; these have a fine effect, especially at a little distance. *L. tigrinum jucundum* is a rarer Lily, of which we have but a few bulbs; it is, I think, the most graceful of its family. Our specimen was about 7 feet high; it had many flowers; some were past their beauty, and some petals had fallen. Its paler foliage and the absence of stem-bulbs make it quite distinct from the other species. I recommend it for nosegays. In high glasses for the dinner table stems of Lilies 3 feet or 4 feet long, a single specimen each of *L. tigrinum splendens*, the showiest of its race, *L. speciosum rubrum verum*, *L. speciosum roseum*, and *L. speciosum album* then put in so as not to touch each other, have a beautiful effect. I believe that I am responsible for Mr. Turner calling the finely coloured Lily he exhibited *L. auratum rubrum vittatum*; as is well known where many *L. auratum*s are grown occasional specimens occur which, beginning at *L. a. pictum*, have more and more colour till they approach *L. a. rubro-vittatum*. Mr. Turner's Lily being of not strong growth, would, I think, when fully grown, be so near *L. a. rubro-vittatum* as not to be distinguished from it.—GEORGE F. WILSON, Heatherbank, Weybridge.

Pentstemons are grand this year, for, owing to the winter being mild, they have escaped injury from frost, and almost every shoot is now terminated by a long fine spike of bloom. Those who have good showy kinds which they would like to save and perpetuate should at once put in cuttings, which, if properly managed, strike freely at this season, and make good plants ready for turning out in the borders early next year. The way to start with them is to take off the young half ripe shoots and trim them in the ordinary way, leaving them when made about 4 inches long. They should then be inserted in sharp sandy soil, either in pots or on a shady border, under a handlight, when, if sprinkled and kept close, they quickly root, and are soon ready for potting off singly or planting out, to be wintered under cover of a cold frame. That is the only safe way of keeping them safe, as though considered to be hardy, they become crippled during severe weather, and sometimes get entirely killed. To prevent this, when any are left out, it is a good plan to protect them by placing a mound of leaf soil around the collar and sticking a few Evergreen branches over it to keep it from being displaced. Since Pentstemons have been so much improved, many depend on seedlings, and these afford great variety, for though many may be raised, it is seldom that two are exactly alike, a diversity which renders them all the more valuable. The way to raise seedlings is to sow in a pot or pan filled with finely sifted soil, and then lay a pane of glass over it and shade till the seeds germinate. This they will soon do if the soil be kept moist by gentle sprinkling or damping, but care must be taken that it does not become over wet. As soon as the young plants are up and large enough to handle, they should be pricked off in pans or potted singly and wintered up near the glass in any ordinary frame, the same as advised for the cuttings.—S. D.

Replanting Daffodils.—Mr. Wolley Dod tells us at p. 173, "No doubt the million dig up their Daffodils at the wrong time." Precisely so. It was to fix a right time that my notes under the above head were penned, and that time in the soil and climate here of Dublin I find to be in July. Some soils do not suit *Narcissus* generally. Mr. Barr, for example, has some difficulty at Tooting, I believe; but we must never forget that in some suitable soils the Daffodil lives and thrives for centuries without either digging or drying off, and wherever it is necessary to dig *Narcissus* bulbs, my

own experiments, conducted now for many years, prove July to be the best time. A friend, whose letter comes to hand just as I write, and who sends me finely grown bulbs which bear out his remarks, says: "When I lifted my bulbs a few days ago the ground was as dry as powder, and there was not a sign of growth in any of the bulbs." My own desire is that amateurs and others should not lose a season's flower harvest by lifting their bulbs at the wrong time, and the right time to lift them is when they have neither roots nor leaf-growth in a living state. No amount of "drying off" will ever cause a bulb to blossom unless the germ of that blossom is in the bulb ere it be dug.—F. W. B.

KITCHEN GARDEN.

DO POTATOES WEAR OUT?

READERS OF THE GARDEN generally will probably answer this question in the affirmative, citing perhaps the York Regent and other old once reliable and much esteemed kinds, but which now seem no longer able to grow with normal vigour. I shall, moreover, be told that even some of the newer kinds are also beginning to lose that strength and fertility which first distinguished them, a sure sign that they have entered on that road which the more ancient varieties have already travelled. Those who grow the Potato largely should be in a position to express a positive opinion on the matter. They ought to know whether *Magnum Bonum* and other kinds which have now been in cultivation for some years show signs of degeneracy. My impression is that, with care in selection and preservation of seed, the stamina of any particular kind can be maintained at its proper standard for an unlimited period. Degeneracy there may be, but I believe caused more by want of care in the selection of seed than by an inherent tendency to deterioration. I am induced to form a strong opinion on this subject by the fact that we have grown the Early Shaw and a selection of Ashleaf Kidney, the former some twenty, the latter fifteen years, and that so far from deteriorating, the tubers this year are as good as we ever had them. Now twenty years is a long time, and one would have thought that the strong tendency to degenerate, which some assert Potatoes so plainly display, would have manifested itself within that period. But no; the crop is as heavy and the tubers are as good in every way as when these kinds came freshly into our hands. I could scarcely have chosen two better kinds as illustrations than those here named, both having distinctive features, and both being very old kinds many years in cultivation (by the way, can anyone say when the Early Shaw was raised?), and yet I will venture to assert that better tubers than we have dug of them have seldom been grown. Of all the kinds of Potato in cultivation one would have thought the Ashleaf would be the most likely to feel the weakening influence of time; it is not strong naturally, is very susceptible to disease, and is more often grown under unfavourable conditions than most other sorts, yet I doubt if the average yearly yield of this Potato is not as great as thirty years ago. I can quite understand that in the case of Potatoes grown as field crops certain kinds may in time deteriorate, and the cause to me seems to be very plain; too often for want of storage room the seed is laid up in heaps, with the consequence that sprouting often takes place. The sprouts are rubbed off once, perhaps twice, during the winter, and each time the set sustains some loss of vitality. When such is the case, how can it be wondered at that the yield is deficient; the wonder would be if the stock did not degenerate under such circumstances. Change of seed is resorted to with oftentimes beneficial effect, but as the sets are generally obtained from a trade dealer who carefully sorts and stores them, their superior quality would alone account for the improvement. We all know what selection will do in improving any particular race of plants, and if choosing the most perfect sets and carefully storing them will add to the cropping qualities of

a Potato, it is certain that indifference on the one hand and absolute neglect on the other will operate as strongly in the opposite direction.

J. C. B.

TOMATO CHISWICK RED.

THIS fine Tomato will be distributed during the coming season. When looking through Messrs. Sutton's grounds lately I saw it among a collection of Tomatoes growing in the open air. Some eighty different samples had been sown, and they were all doing well. Anyone interested in the culture of Tomatoes in the open air would do well to pay a visit to Reading and inspect this remarkable collection, as they would not only gain an excellent knowledge of the best sorts to grow, but also pick up some very useful hints as to how to grow them. By far the earliest is Sutton's Earliest of All, which appears to be a good, free cropping variety. It is a very early selection from the common red, and the fruits were already fit to gather, or within a day or two of being so. This should prove an excellent variety for outdoor cultivation. A very fine Tomato is to be seen in the shape of Reading Perfection, which is perhaps one of the handsomest Tomatoes grown, as it produces large and very handsome fruit of the form of Acme, but of a very rich crimson colour. This variety was not only largely, but very finely shown at the summer exhibition of the Reading Horticultural Society on August 21, and the fruit committee of the Royal Horticultural Society recently awarded it a first-class certificate of merit when seen growing at Chiswick. But the Chiswick Red, which was awarded a first-class certificate in 1883, is a perfect wonder in its way. It is of large egg-shape, attaining to a good size, and the fruit is borne in enormous clusters. I counted as many as thirty-two on one bunch, and I may safely state that they average from twenty-five to thirty fruits. The plants do not produce one cluster only, but several, and another remarkable thing about it is that out of some fifty or sixty plants growing at Reading every one was perfectly true to character and equally prolific. It can scarcely be expected that fruits of this variety borne so freely can stand against the handsome Reading Perfection on the exhibition table, but those who want a quantity of very useful red fruit will find this variety *par excellence* the very one to supply it. It appears to be early also, and as market gardeners are now turning their attention to the cultivation of Tomatoes in the open ground, the Chiswick Red is well deserving their attention.

R. D.

5237.—**Kidney Potatoes.**—"Observer's" case of a second prize for three dishes of kidney Potatoes having been taken at a local exhibition by dishes of Myatt's and Rivers' Ashleafs and Paterson's Victoria Potatoes is sad proof of the unfitness of many so-called judges for the discharge of their duties. Not only should the collection have been disqualified, because it contained a round sort in Victoria, but further because it contained two Ashleafs identical in character, though diverse in name. With so many fine early kidney Potatoes in commerce, showing such identical kinds merits warm disapprobation.—D.

SHORT NOTES.—KITCHEN.

Tomatoes.—From Mr. Gilbert, of Burghley, come some very fine Tomatoes, large, smooth, and bright in colour. Out of a number of varieties grown at Burghley Mr. Gilbert states that for size, flavour, and beauty, the Ham Favourite is the best. It is, too, he adds, a grand cropper, producing really fine fruit in 10-inch pots.

Girford Giant Runner Bean.—Mr. Laxton exhibited a capital dish of this new Bean at the Shrewsbury show last week. The pods were 12 inches in length, broad, and green. Some might be inclined to call it coarse, but I consider it very handsome; our rows of it here are prolific and it has a good appearance.—J. MUR, *Margam*.

5237.—**Kidney Potatoes.**—Rivers' Ashleaf Potato and Myatt's were most likely the same. I have bought both of them from the trade and could not see any difference. Paterson's Victoria is entirely different both in growth and tuber, and cannot properly be classed as a kidney. If it did not differ in appearance from Myatt's, it was not true to name.—J. DOUGLAS.

White Elephant Potato.—This variety seems to be especially suited for dry seasons; the drought that has so seriously affected some crops, and even many varieties of Potatoes, has enabled the White Elephant to produce tubers evenly sized and excellent in quality. I have been somewhat sceptical as to the value of this sort as a garden Potato, owing to the varied reports made respecting it last season. I resolved, however, to try it fairly along with other kinds grown for seed. On March 31 I planted 2 gallons of seed in rows 2½ feet apart in good soil, and have just lifted the crop. It consists of 2 cwt., or 1 cwt. from each gallon of seed, which is the heaviest crop of any I have lifted this season. As a rule, Potato crops are not so heavy as last year, but excellent in quality generally. These American Potatoes are decidedly of better quality in dry soils and seasons than in moist, dripping ones; hence the conflicting accounts that occur as to quality. In this locality the American Rose, Beauty of Hebron, and kindred sorts are excellent cropping, cooking, and eating Potatoes, while in stiff retentive soils they are not so satisfactory. I am glad to say that we have not the least trace of disease hereabouts, and trust that it may now finally take leave of us, for notwithstanding all our efforts to find a substitute for Potatoes, but little progress has been made up to the present in that direction. Never in the history of its culture has so large a breadth of Potatoes been planted as this year.—JAMES GROOM, Gosport

The Potato crop—"E. B." is right in stating that the present season's Potato crop is a good one. Owing, of course, to the exceeding heat and consequent dryness of the atmosphere the disease is rendered incapable of evil, and rarely for the past forty years have we had so good a Potato crop with so little disease. In his allusion to Cosmopolitan Kidney "E. B." says that now well-known variety is the best flavoured amongst kinds in cultivation, but very susceptible of disease. I have grown it largely, and that statement is indeed news to me; on the contrary, I have always found it remarkably sound. Still, in rich garden soils no doubt the tubers are much forced up to the surface, owing to their becoming long and large, and in that way may be unduly exposed to the action of fungoid spores, but otherwise I cannot admit that it is at all liable to disease. A market grower who had it last year liked it so well that he saved every tuber, planted them again this year, and has a very fine clean crop. In a garden near the Thames it was very good last year, and this season it is also excellent, and the gardener is enthusiastic over his stock. Perhaps "E. B." may not have the true kind. *Magnum Bonum* is wonderfully good this year, and has been in strong demand in the London markets. Now that the harvest is over, farmers and others are sending in large quantities, and the price has fallen to £4 and £4 10s. per ton, so that some home growers are now holding their hands. Had the drought continued till the end of September, the latest Potato crops would have been much less in bulk than the earlier ones.—D.

Transplanting Asparagus.—The proper season at which to transplant Asparagus appears to be an open question, for while the majority of large growers seem to favour spring planting just as young shoots are beginning to start into growth, others go to the extreme of advocating summer planting, when the young plants have made considerable top growth, and as those who get their plants from long distances must of necessity plant dormant roots, or rather crowns, the planting season may be said to last for nine months of the year. Now, after repeated trials, I am quite satisfied that planting in March or April is preferable to winter planting, provided the plants can be removed without breaking the young growths or being long out of the ground, for the roots of Asparagus are very tender and soon suffer if exposed. But I cannot see the advantage of deferring planting until midsummer provided it can be done earlier, although in special cases it may be useful. Beds which we formed and planted in March and April were well established and covered with healthy foliage by midsummer,

when the heat and drought were so intense that I am sure any attempt at transplanting would have been attended with much more labour and risk than were encountered in spring, and could not have been more satisfactory. Indeed, I do not observe a single plant to have failed out of many hundreds transplanted.—J. G.

How to grow Mushrooms.—My stables stand at the back of my business premises, exposed to the sun almost from sunrise to sunset. About nine months ago I bought some German peat litter. After bedding the horses freely with this litter I had more good manure than I required for my garden; consequently in May I directed one of the men to make a Vegetable Marrow bed close to the stables. For this purpose he used about a cartload of the manure, spread it into a heap about 8 feet by 5 feet, put on two or three barrowfuls of soil, and planted two Marrows. I need scarcely say that with such fine weather and a little attention in watering they did well. About three or four weeks since one of my little boys was looking at the Marrows and marking their growth, when he saw on the edge of the bed what he thought was a Mushroom, and called my attention to it. I saw at once that it was a true Mushroom, and directed that the bed should be well watered all over; this was done, and in two days my Marrow bed was quite a sight with Mushrooms of the finest quality—I may say literally in thousands, and so thick that they had not room to grow. Every day since then we have been gathering dishes of Mushrooms in excellent condition and flavour, such as one never gets from any grown artificially in dark cellars or under stages, &c.—RUSTIC.

GARDEN FLORA.

PLATE 456.

PRIMULA OBCONICA.*

PRIMULA OBCONICA, or *poculiformis*, as it was first named, is described under the latter name in the *Botanical Magazine* for 1881, but the figure there given fails to convey an adequate idea of the plant when blooming in full health and strength. Sir Joseph Hooker, in his description which accompanied the illustration in the *Botanical Magazine* (tab. 6582), tells us it was discovered by Mr. Maries, when travelling for Messrs. Veitch in the interior of China, at the Ichang Gorge, and flowered at Chelsea in September, 1880. It is therefore comparatively a new plant, and the public will ask two or three natural questions before they adopt it generally—is it easy to grow? is it hardy? and what is it worth as a decorative plant, or for cutting for bouquets?

The winters we have experienced lately are hardly worthy of the name, and its hardiness has therefore yet to be tested; but its cultivation is so easy that it may well be treated as an annual, and it is well worth a place in any conservatory for its winter bloom.

Seed obtained from Messrs. Veitch and sown in April, 1883, came up at once like Mustard and Cress (and here may I pause to say that as a rule *Primula* seed should be sown as soon as ripe, and not left over till the following spring). The seed having been sown in a shallow pan, the little plants were pricked off as soon as they had second leaves and could be handled, grown on in a cold frame, where they were shaded from the sun, and shifted into pots as they grew larger.

The soil used was one half loam, one-quarter leaf-mould, and one-quarter old stable manure, with a pinch of Clay's Fertiliser mixed up in the soil in each pot. Very little trouble or attention was given to them, and in August or September of the same year they were commencing to flower

with remarkable freedom. The extent of this characteristic is simply astonishing, for the same plants have continued to develop fresh trusses ever since; so that plants which were then five months old from seed began to flower last August, have remained blooming ever since, and are still in full blow. One plant in a 6-inch pot had at one time in the month of February last no less than thirty-three more or less expanded trusses, and every healthy plant has been able to carry ten to fifteen trusses continually without overtaxing its energies.

The seedling varieties vary somewhat in tint of colour and in size and shape, the pin-eyed flowers, where the style projects beyond the low-lying anthers, having apparently larger and better-shaped corollas than the thrum-eyed, and it is noticeable that on the strongest trusses there is a



Primula obconica; showing habit of growth.

tendency to throw up a second tier of bloom, as in *Primula japonica* or *verticillata*.

Free as *P. obconica* is in flowering, the pollen must be carefully used where the cultivator desires to set the flower for seed, for this species appears to be a shy seeder, and from the multitudes of blooms I have enjoyed, only a few capsules, which had been delicately treated, have yielded me seed; these, however, produced the most tractable and willing of plantlets. Gathered and sown in April this year, the plants are already in bloom, full of vigour and promise, and ready to take their place in the conservatory when October frosts warn us that the out-door garden is a thing of the past for the current year.

P. OBCONICA, then, is a plant that only wants to be better known to become a universal favourite, and I should not wonder if in skilful hands it is not capable of improvement like its countryman, *sinensis*. At present it is a really useful species for winter decoration, and its delicate and refined trusses are ever charming as cut flowers for a bouquet.

JOHN T. D. LLEWELYN.

* Drawn from a plant grown in Mr. J. T. D. Llewelyn's garden, Peullergate, Swansea, April 23, 1884.



GARDEN ROSES.

A COMPLETE CATALOGUE OF VARIETIES NOW IN CULTIVATION, COMPILED FOR HIS BOOK ON THE ROSE BY THE LATE H. B. ELLWANGER, MOUNT HOPE NURSERIES, ROCHESTER, NEW YORK.

A REGISTER of this nature cannot attain absolute perfection, but I have been at great pains to make it complete and accurate. As regards the age of the different varieties and by whom sent out, I have obtained my information from the raisers themselves, their catalogues, from various horticultural magazines and books, mostly French, and from a few amateurs, who have interested themselves in the subject. Among these are Mons. Jean Sisley, whose monograph of the Roses raised at Lyons has been of valuable service. I believe this will be found much the most reliable list of the kind, but from seeing so many inaccuracies in others of similar character I know there must be some errors in this. Any of my readers who may discover mistakes or mis-statements of facts will greatly oblige by communicating with me, giving the authority which they have. In the descriptions the more popular sorts are more fully treated than those not so well known; where a variety is described as belonging to a type, a lengthy description is rendered unnecessary, and only the most distinctive features are given. In compiling this list the following method has been determined on as the best. The name of the variety is first given; then the habit of growth; next, in ruled column, letters which show to what class the variety belongs; then name of the raiser and year when the Rose was sent out; afterwards the parentage, if known, or type to which the sort may belong; and, lastly, the description. In cases of synonyms, they are placed in brackets after the accepted name. This arrangement has been determined upon, after much careful thought, as the best that can be made. The following is an explanation of the method used in describing the varieties:—

Colour.—The prevailing shade in the most perfect development of the flower. **Size.**—Small, from 1 in. to 2 in. in diameter; medium, from 2 in. to 3 in. in diameter; large, from 3 in. to 4 in. in diameter; very large, above 4 in. in diameter. **Fullness.**—Semi-double, with two to four rows of petals; double, having more than four rows of petals, but the seed organs are shown when the flower expands; full, in which the expanded flowers seldom show the stamens. **Form.**—Cupped, the inner petals are shorter than the outer ones, the latter stand erect, and are generally incurved; globular, outer petals are concave, often with convex edges, the petals fold richly one about the other; reflexed, numerous petals, generally small, rising tier above tier to the centre; flat, the surface of the flower is level and all the petals are exposed to view—varieties of this kind are very full and rarely are seed bearers.

Abbreviations used describing the habit of growth.—Vig., Vigorous.—These sorts which are most luxuriant in growth. Free.—Varieties which rank next in order, producing shoots somewhat shorter or less strong than the first. Mod., Moderate.—These kinds make a compact growth, but do not produce long shoots. Dwf., Dwarf.—These are the most delicate or slow-growing sorts. Among hardy Roses, those marked *dwf.* should, almost invariably, be budded.

It is to be noted that nearly all varieties which have in them shades of lilac, violet, or purple are very fleeting in colour.

Abbreviations, describing the classes to which the varieties belong. A., Austrian; Ay., Ayrshire; Bk., Banksia; B., Bourbon; B't., Boursault; Cl. T., Climbing Tea; Dam., Damask; Ev., Evergreen; Fr., French; H. Ch., Hybrid China; H. Cl., Hybrid Climbing; H. N., Hybrid Noisette; H. P., Hybrid Perpetual; H. T., Hybrid Tea; Mic., Microphylla; M., Moss; Mult., Multiflora; N., Noisette; P. M., Perpetual Moss; Pol., Polyantha; P., Prairie; Prov., Provence; S., Scotch; T., Tea Roses.

NAME OF VARIETY AND HABIT OF GROWTH.	CLASS.	
A. Geoffroy St.-Hilaire, mod.	H.P.	E. Verdier, 1878. Red, with a shade of crimson; medium size, full; fine circular form, fragrant and free. Seed organs well developed; seven leaflets are common, a great rarity among dark varieties of this class.

NAME OF VARIETY AND HABIT OF GROWTH.	CLASS.		NAME OF VARIETY AND HABIT OF GROWTH.	CLASS.	
A. M. Ampère	H.P.	Liabaud, 1881. Raised from Lion des Combats.	Alpaide de Roubaix, free	H.P.	Campy, 1863. Rose colour.
Abbé Bramercel, mod.	H.P.	Guillot-fils, 1871. Raised from Giant of Battles. Crimson, shaded with velvety purple.	Alphonse Damaizin, mod.	H.P.	Damaizin, 1861. Bright crimson
Abbé Giraudier	H.P.	Levet, 1869. Bright rose.	Alphonse Karr	H.P.	Portemer, 1845. Flesh colour, margined with carmine.
Abbé Reynaud, vig.	H.C.	Guillot-fils, 1863. Large, carmine-rose flowers, not full enough; growth very rank.	Alphonse Karr	H.P.	Feuillet, 1855. Bright rose, medium size, full.
Abel Carrière, mod.	H.P.	E. Verdier, 1875. Velvety crimson, with fiery centre; large, full flowers, fragrant; short wood, sharp red spines; shows traces of Bourbon blood. A Rose of better form and finish than most of the very dark sorts. Shy in autumn.	Alphonse Karr, mod	B.	Nabonnand, 1878. Raised from Duchess of Edinburgh. Rosy crimson. Sent out as a Tea; but, with its parent, is better placed among the Bengals. There is, as yet, no crimson Tea.
Abel Grand, mod. or free	H.P.	Damaizin, 1865. Jules Margottin type. Glossy rose, large and full, fragrant; unreliable as to form, often the finest in autumn.	Alphonse Mortier, mod.	T.	Madame Ducher, 1875. Lilac-rose.
Achille Gonod, free	H.P.	Gonod, 1864. Raised from Jules Margottin. Rosy carmine.	Amabilis, free	T.	Touvais. Flesh colour, centre rose; habit, branching.
Acidalie, free	B.	Rousseau, 1837. Blush, often white; fragrant.	Amadis, vig.	B't.	Laffay, 1829. Purplish crimson; semi-double.
Adam, mod.	T.	Adam, 1838. Salmon-rose, fragrant; esteemed for forcing.	Amazone, mod.	T.	Ducher, 1872. Yellow, reverse of petals veined with rose; long, well-formed buds; habit delicate.
(Syn., President.)					
Admiral Nelson, vig.	H.P.	Ducher, 1859. Bright crimson, double, cupped form; very spiny, straggling growth; shows Bourbon origin.	Ambrógio Maggi	H.P.	Pernet, 1879. Raised from John Hopper. Bright rose.
Admiral Rigny	N.	See Eugene Fierolle.	Amélie Hoste	H.P.	Gonod, 1874. Pink, reverse of petals darker.
Adolphe Bruguart, mod.	H.P.	Margottin, 1868. Carmine-red, full, fragrant.	America, vig.	N.	C. G. Page, 1850. (Sent out by T. G. Ward, of Washington.) Raised from Solfaire x Safrano. Pale yellow, with fawn centre; large full flowers; more shy than either parent.
Adrienne Christophle, mod.	T.	Guillot-fils, 1868. Apricot-yellow.	American Banner, dwf.	T.	G. Cartwright, 1879. (Sent out by Peter Henderson.) A sport from Bon Silène. Carmine, striped with white, semi-double; the flowers and foliage are both small. Of no value except as a curiosity.
Agricola Black, mod.	Fr.	Dark crimson. Not valuable.			
Agrippina, mod.	Beng.	Introduced to England from China in 1789. Rich crimson, specially valued for its fine buds. A useful sort for bedding out and for forcing. The best of the class.	André Dunand, mod	H.P.	Schwartz, 1871. Raised from Victor Verdier. Silvery rose; fades quickly and often opens badly.
(Syn., Cramoisi-Supérieur.)					
Aimée Vibert, free	N.	Vibert, 1828. Raised from Semper-virens Plena. Pure white, small double flowers, produced in large clusters; seven leaflets; nearly hardy.	André Leroy, mod.	H.P.	Trouillard, 1868. (Sent out by Standish.) Crimson, with a shade of violet; an attractive colour, but very transient; often ill-formed.
Aimée Vibert Scandens, vig.	N.	Curtis, 1841. A sport from the above; identical with the old kind, except that it is of stronger growth. These pretty sorts are both difficult to propagate from cuttings.	Anicet Courgeois	H.P.	Moreau-Robert, 1880. Raised from Senateur Vaisse x Madame Victor Verdier. Cherry-red, cupped form.
Alba Carnea, free	H.P.	Touvais, 1867. White, tinted with rose; foliage dark; seven leaflets are common.	Anna Alexieff, free	H.P.	Margottin, 1858. Rose colour, large full flowers, freely produced.
Alba Grandiflora, vig.	Bk.	Very small, full flowers, delicately scented.	Anna Eliza, vig.	P.	William. Red, tinged with lilac; numerous thorns.
Alba Mutabilis, free	H.P.	E. Verdier, 1865. Pink, sometimes mottled, medium size, double. Wood armed with dark brown thorns.	Anna Olivier, mod.	T.	Ducher, 1872. Buff, shaded with rose.
Alba Rosea, free	T.	Sarter, 1855. See Madame Bravy.	Anna Maria, vig.	P.	Feast, 1843. Pale pink; very few thorns.
Alexandre Dutilleul	H.P.	Levéque, 1878. Bright rose.	Anne de Diesbach, vig.	H.P.	Lacharme, 1858. Raised from La Reine. In colour, the most lovely shade of carmine; very large, double flowers, fragrant; one of the hardest. A very desirable garden Rose.
Alexander Fontaine, vig.	H.P.	Cherry red; mildews easily; shy bloomer.			
Alexandrine Bachmetzky, mod.	H.P.	Margottin, 1852. Cherry-red, rosette shape, medium size; foliage dark; wood armed with pale red thorns.	Anne Marie Cote, free	H.N.	Guillot-fils, 1875. White, sometimes tinged with pink.
Alfred Colomb, free	H.P.	Lacharme, 1865. Raised from General Jacqueminot. Carmine-crimson; large, or very large, full; of fine, globular form, extremely fragrant; green wood, with occasional pale green thorns, the foliage large and handsome. A grand Rose; the most useful in its class for general cultivation.	Anne Marie de Monttravel, mod.	Pol.	Rambeau & Dujeuil, 1879. Very small, full, white flowers, somewhat fragrant. Resembles Paquerette.
Alfred de Dalmas, free	P.M.	Laffay, 1855. Pink, small flowers, of poor quality; the wood is very thorny; straggling habit.	Annie Laxton, mod	H.P.	Laxton, 1869. (Sent out by Geo. Paul.) Satiny rose, medium or large size, very full.
Alfred de Rougemont, free	H.P.	Lacharme, 1863. Raised from General Jacqueminot. Crimson-magenta, very large, full, well built, fragrant; rather shy bloomer.	Annie Wood, mod. or dwf.	H.P.	E. Verdier, 1866. Bright crimson with a shade of vermilion; a good autumnal Rose.
Alfred K. Williams, mod.	H.P.	Schwartz, 1877. Magenta-red, shaded with crimson; large, full flowers, partly imbricated. A very beautiful Rose; but, thus far, not constant and reliable.	Anthros	T.	Lepage. Flesh colour, shaded with yellow.
Alfred Leveau	H.P.	Vignerot, 1880. Carmine-rose.	Antoine Devert	T.	Gonod, 1880. White, tinged with pink, reverse of petals shaded salmon.
Alice Durcau	H.P.	Vignerot, 1867. Rose-lilac, good globular form.	Antoine Ducher, mod.	H.P.	Ducher, 1866. Violet-red; large, well shaped flowers; fragrant, wood very thorny. The colour is very fleeting.
Alice Leroy, mod or free	M.	Trouillard, 1842. Pink, semi-double; buds are not mossy. Armed with very red spines.	Antoine Mouton, vig.	H.P.	Levet, 1874. Deep rose, tinged with lilac, not unlike Paul Néron; it is more fragrant and more hardy, but in colour and size is below that sort.
Aline Sisley, mod.	T.	Guillot-fils, 1874. Violet-rose, not a clear shade; a fruity, pleasant fragrance.	Antoine Quilou	H.P.	E. Verdier, 1879. Brownish crimson.
			Antoine Verdier, mod.	H.P.	Jamain, 1871. Rose shaded with lilac, well formed buds, no perfume; the colour is muddy. This sort would not improperly be classed among the Hybrid Teas, as it resembles them in habit as well as in continuity of flowering.

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<i>Centifolia cristata</i> , free	Dam.	Vibert, 1827. Large, pink flowers, not crested, fragrant and good.	<i>Climbing Bessie Johnson</i> , vig.	H.Cl.	G. Paul, 1878. A sport from Bessie Johnson. Like the parent, except more vigorous.	<i>Comtesse de Muri-nais</i> , vig.	M.	Vibert, 1843. White, tinged with flesh; not inclined to mildew.
<i>Centifolia rosca</i> , mod.	H.P.	Touvais, 1863. Bright rose, circular, shell form; light green wood, with numerous red thorns; foliage crimped.	<i>Climbing Charles Lefebvre</i> , free	H.Cl.	Cranston, 1876. Not any stronger in growth than the original.	<i>Comtesse de Nadail-lac</i> , mod.	T.	Guillot-fils, 1871. Coppery yellow, illumined with carmine-rose; large, full, distinct, and effective; highly esteemed.
<i>Charles Baltet</i>	H.P.	E. Verdier, 1877. Carmine-red, medium size, full, fragrant.	<i>Climbing Countess of Oxford</i> , free	H.Cl.	Smith, 1875. Of no value.	<i>Comtesse de Ségur</i>	Prov.	V. Verdier, 1848. Buff-white.
<i>Charles Darwin</i> , free	H.P.	Laxton, 1879. (Sent out by G. Paul.) Raised from Madame Julie Daran. Brownish crimson, with a shade of violet, very beautiful and distinct; mildews easily.	<i>Climbing Devonien-sis</i> , vig.	C.T.	S. J. Pavitt, 1858. (Sent out by Henry Curtis.) A sport from Devoniensis. This seems to us as productive as the old sort, and its extra vigour of growth is an advantage.	<i>Comtesse de Sénye</i> , mod.	H.P.	Lacharme, 1874. Said to be raised from La Reine, but it shows more of the Jules Margottin characteristics. Silvery pink, often mottled; full, finely shaped, globular flower, of medium size, slightly fragrant; wood light green, foliage darker, thorns red, seven leaflets. Not reliable about opening, but a very free bloomer, and well worthy a place in a small collection. One of the most distinct; of great beauty when grown under glass.
<i>Charles Duval</i>	H.P.	E. Verdier, 1877. Red, medium size.	<i>Climbing Edouard Morren</i> , vig.	H.Cl.	G. Paul, 1879. A sport, likely to make a very useful pillar Rose.	<i>Comtesse Henriette Combes</i>	H.P.	Schwartz, 1881. Bright satiny rose.
<i>Charles Fontaine</i>	H.P.	Fontaine, 1868. Crimson, fragrant.	<i>Climbing Jules Margottin</i> , vig.	H.Cl.	Cranston, 1875. A sport from Jules Margottin. Flowers are the same as in the old sort, except being a little smaller, and for this reason it is finer in the bud state. The best of all the climbing sports; highly commended as a useful pillar Rose.	<i>Comtesse Nathalie de Kleist</i>	H.P.	Souper et Notting, 1880. Coppery rose, reverse of petals lake.
<i>Charles Getz</i> , vig.	B.	A. Cook, 1871. Rosy pink, medium size, full, fragrant; shy in autumn.	<i>Climbing Madame Victor Verdier</i>	H.Cl.	G. Paul, 1877. Light rosy salmon: like all these climbing sports the flowers become smaller, and are produced more freely than the type.	<i>Comtesse Riza du Parc</i> , free	T.	Schwartz, 1876. Raised from Comtesse de Labarthe. Bronzed rose, with a carmine tint; medium size, moderately full, highly perfumed.
<i>Charles Lawson</i> , vig.	H.Ch.	1853. Light rose colour, large, full, fragrant; five leaflets; useful for pillars.	<i>Climbing Eugénie Verdier</i> , free	H.Cl.	G. Paul, 1871. Flower somewhat smaller and less freely produced than in the old sort.	<i>Comtesse Owaroff</i> , free	T.	Margottin, 1861. Salmon-pink.
<i>Charles Lefebvre</i> , free (Marguerite Brasc.)	H.P.	Lacharme, 1861. Claimed to have been raised from General Jacqueminot x Victor Verdier. Reddish crimson, sometimes with a shade of purple, very velvety and rich, but fading quickly; large, full, thick petals, beautifully formed. There are a few thorns of light red; the wood and foliage are of light reddish green. A splendid Rose.	<i>Cloth of Gold</i> , vig. (Chromatella.)	N.	Coquereau, 1843. Raised from Lamarque. Deep yellow centre, with sulphur edges; large, full flowers. A grand Rose, but difficult to grow well.	<i>Constantin Tretia-koff</i>	H.P.	Jamain, 1877. Cherry-red, large, double, without fragrance.
<i>Charles Margottin</i> , mod.	H.P.	Margottin, 1865. A seedling of Jules Margottin. Fiery red, shaded with crimson; large, full flowers; retains the colour well; smooth, reddish wood, armed with occasional red spines; foliage slightly crimped. An excellent, distinct Rose, quite unlike the parent in habit. It doubtless comes from a natural cross of some dark sort like Charles Lefebvre or Jules Margottin.	<i>Clothilde</i>	T.	Rolland, 1867. Creamy white, centre rosy salmon.	<i>Copper</i> , mod.	A.	Coppery red, very striking shade, semi-double.
<i>Charles Rouillard</i>	H.P.	E. Verdier, 1865. Pale rose, well formed.	<i>Clothilde Rolland</i>	H.P.	Rolland, 1867. Cherry-rose.	<i>Coquette des Alpes</i> , vig.	H.N.	Lacharme, 1867. Raised from Blanche Lafitte x Sappho. White, tinged with blush; size, medium to large; semi-cupped form, the wood is long, jointed. A very desirable white Rose.
<i>Charles Rovelli</i> , free	T.	Pernet, 1875. Carmine-rose, not unlike Bon Silène, from which variety, so far as our observation goes, it only differs to be inferior.	<i>Col. de Rougemont</i> , mod.	H.P.	Lacharme, 1853. Of the Baronne Prévost type. Light rose.	<i>Coquette des Blan-ches</i> , free or vig.	H.N.	Lacharme, 1872. Same parentage as above. White, sometimes tinged with blush; of medium size, very full, somewhat flat, but pretty; growth bushy. An improvement on Baronne de Maynard and Madame Alfred de Rougemont.
<i>Charles Turner</i> , free	H.P.	Margottin, 1869. Crimson-vermillion, large, full flowers, flat form, resembling General Washington; wood armed with numerous dark red thorns. A shy bloomer.	<i>Colonel de Sansal</i> , mod.	H.P.	Jamain, 1874. Carmine-red.	<i>Comte de Germiny</i>	H.P.	Ducher, 1870. Pale yellow; medium, or small size; pretty in bud, and useful for bedding.
<i>Charles Verdier</i> , dwf.	H.P.	Guillot-père, 1866. A seedling of Victor Verdier. Pink, with a tinge of salmon; globular, full flowers; thorns dark red. A bad one to open, and fades very soon.	<i>Comice de Seine-et-Marne</i> , mod.	B.	Pradel, 1842. Deep red, shaded with violet.	<i>Comte d'Eu</i>	B.	A. Koch, 1855. Raised from Devoniensis. White, sometimes faintly tinged with pale yellow; very large, full; not a free bloomer. This is quite apt to come with a green centre, but it is a grand Rose when well grown, excelling all other white Teas.
<i>Chénédolle</i> , vig.	H.Ch.	Bright red, large, double, shoots very spiny, five to seven leaflets.	<i>Comice de Tarn-et-Garonne</i> , mod.	B.	Pradel, 1852. Carmine-red, well formed.	<i>Comte de Flandres</i>	H.P.	Léveque, 1881. Raised from Jules Margottin. Bright rose.
<i>Cheshunt Hybrid</i> , vig.	H.T.	G. Paul, 1873. Believed to be a natural cross from Madame de Tartas x Prince Camille de Rohan. Red, shaded with violet; large, full, slightly fragrant; very distinct. A good Rose, free in the spring, but shy in autumn.	<i>Common Moss</i> , free (Old Moss.)	M.	Pale rose, very beautiful in the bud. Difficult to propagate from cuttings. None others in the class, except Crested and Gracilis, can rank with this in quality.	<i>Comte de Grivel</i>	T.	Léveque, 1881. Raised from Madame Victor Verdier. Reddish purple, velvety, illumined with carmine.
<i>Christian Puttner</i> , dwf.	H.Ch.	Oger, 1861. Deep violet-rose; an impure shade.	<i>Comte de Mortemart</i> , free	H.P.	Levet, 1871. Raised from Canary. Pale yellow.	<i>Comte de Paris</i> , mod. or dwf.	T.	Levet, 1871. Raised from Canary. Pale yellow.
<i>Christine Nilsson</i> , free	H.P.	Léveque, 1867. Rose colour. In the way of Madame Boutin.	<i>Comte de Nantcuil</i> , vig.	H.Ch.	Margottin-fils, 1880. Rose colour, very fragrant; smooth, pale green wood.	<i>Comte de Sembui</i> , mod.	T.	Quetier, 1852. Light rose, large, full flowers, sometimes with green centre; not unlike Chénédolle.
<i>Claire Carnot</i> , vig.	N.	Guillot-fils, 1873. Pale yellow, somewhat in the way of Céline Forestier, but more fragrant.	<i>Comte de Paris</i> , mod. or dwf.	T.	Quetier, 1852. Light rose, large, full flowers, sometimes with green centre; not unlike Chénédolle.	<i>Comte de Thun-Hohenstein</i>	H.P.	Madame Pean, 1844. Flesh colour, large flowers.
<i>Clara Sylvain</i> , mod. (Lady Warrender.)	Beng.	Madame Pean. White, strongly infused with Tea blood.	<i>Comte de Thun-Hohenstein</i>	H.P.	Madame Ducher, 1874. Salmon and rose, the base of petals coppery yellow; large, full flowers, often malformed. A grand Rose when well grown, but too unreliable.	<i>Comtesse Cecile de Chabillant</i> , mod.	H.P.	Léveque, 1880. Reddish crimson.
<i>Claude Bernard</i> , mod.	H.P.	Liahaud, 1878. Raised from Jules Margottin. Rose colour; little fragrance; not a desirable sort.	<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Comtesse de Muri-nais</i> , vig.	M.	Ducher, 1871. Pale yellow.
<i>Claude Lecet</i>	H.P.	Levet, 1872. Velvety red, fragrant.	<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Comtesse de Nadail-lac</i> , mod.	T.	Marest, 1859. Satiny pink, never above medium size, full, fragrant; of perfect, globular form; numerous dark thorns of small size; foliage dark and tough. A lovely Rose.
<i>Clémence Raoux</i> , vig.	H.P.	Granger, 1868. (Sent out by Charles Lee.) A washed-out pink; large, fragrant flowers, quartered shape; worthless.	<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Comtesse de Ségur</i>	Prov.	Guillot-père, 1869. Raised from Victor Verdier. Carmine-red, tinged with lilac, fades quickly; flowers very large and full; subject to mildew.
<i>Clément Nabonnand</i> free	T.	Nabonnand, 1877. Light yellow, shaded with rosy salmon; not valuable.	<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Comtesse de Sénye</i> , mod.	H.P.	R. B. Postans, 1879. (Sent out by Wm. Paul & Son.) Belongs to the Victor Verdier type. Cherry-red.
<i>Climbing Captain Christy</i>	H.Cl.	Ducher & Scur, 1881. Flowers are like the old variety, from which it is a sport, but the shoots are more slender and longer.	<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Coupe d'Ilébe</i> , vig.	H.Ch.	Laffay. Deep pink, medium or large size, cup form; seven leaflets. A fine, distinct sort.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Cramoisi-Supérieur</i> , free (Agrippina.)	Beng.	Planter, 1834. Rich, velvety crimson, double; fine in the bud. A good bedding variety.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Crested Moss</i> , free (Cristata, or Crested Provence.)	M.	Discovered on the wall of a convent near Fribourg, and sent out by Vibert, 1827. Deep, pink-coloured buds, surrounded with a mossy fringe and crest; free from mildew. A fragrant, very beautiful Rose.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Crimson Beller</i> , dwf.	H.P.	Cranston, 1874. Belongs to Giant of Battles type. Crimson.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Crimson Moss</i> , free	M.	Lee. Crimson, semi-double; poor.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>Crimson Perpetual Crown Prince</i>	H.P.	See Rose du Roi.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.	<i>David Pradel</i> , mod.	T.	W. Paul & Son, 1880. Reddish crimson, tinged with purple.
			<i>Comte de Thun-Hohenstein</i>	H.P.	Léveque, 1880. Reddish crimson.			Pradel, 1851. Lilac rose, large

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<i>Dean of Windsor</i> , mod.	H.P.	Turner, 1879. Vermilion, large, full flowers.	<i>Duchesse de Morny</i> , vig.	H.Ch.	E. Verdier, 1863. Bright rose; erect growth; mildew.	<i>Dupetit Thouars</i> , viz. - (continued)	B.	shaded with crimson; hardy, non-autumnal.
<i>De la Grufferaie</i> , vig.	Mult.	1836. Lilac-rose. This variety makes a valuable stock on which to bud strong-growing kinds.	<i>Duchesse d'Orléans</i> , free	H.P.	Quétier, 1852. Blush, large, full; often opens badly, and is subject to mildew.	<i>Dupuy Jamain</i> , free	H.P.	Jamain, 1868. Cherry-red, with a shade of crimson; large, double, well formed, fragrant; a good seed-bearer. Were this more full, it would be a Rose of the first rank.
<i>Delille</i> , mod.	P.M.	Robert, 1852. Red, tinged with lilac, flat form, fragrant, not mossy. Of no value.	<i>Duchesse de Thuringe</i> , free	B.	Guillot-père, 1847. White, slightly tinged with lilac, a free bloomer.			See Rose du Roi.
<i>De Luxembourg</i> , mod. or free	M.	Hardy. Crimson, not attractive.	<i>Duchesse de Vallombrosa</i> , mod.	H.P.	Schwartz, 1875. Raised from Jules Margottin. Pink, generally opens badly; not valuable.	<i>Du Roi</i>		Christy, 1850. (Sent out by G. Paul.) Cherry-rose, medium size, beautiful form.
<i>De Meaux</i> , dwf. (l'ompon.)	M.	Found growing in a garden at Taunton about 1825. Pink colour, small, full flowers.	<i>Duchesse de Vallombrosa</i>	T.	Nabonnand, 1879. Coppery red, distinct.	<i>Earl of Beaconsfield</i> , dwf.	H.P.	Paul. Cherry-rose, medium size, beautiful form.
<i>Desprez</i> , vig.	N.	Desprez, 1838. Rose, blended with coppery yellow, highly scented.	<i>Duchess of Connaught</i> , dwf.	H.T.	Bennett, 1879. Raised from President x Duchesse de Vallombrosa (H.R.). Silvery rose, of large globular form; full, highly scented. Resembles La France, but the flowers are more circular, the foliage larger and better. It retains its globular form, the petals recurving to a less extent; but La France is, notwithstanding, much the better sort.	<i>Eclatante</i> , free	M.	Cherry-rose, buds of good form, well mossed; darker than the common or prolifera, one of the best. Why this Rose has passed out of cultivation we do not know; there are but three in the class as good.
<i>Deuil de Paul Fontaine</i> , vig.	M.	Fontaine, 1873. Red, shaded crimson, large, full; not mossy; worthless.			R. B. Postans, 1879. (Sent out by W. Paul & Son.) Belongs to the Victor Verdier type. Cherry red; not very promising.	<i>Edmund Wood</i> , mod.	H.P.	E. Verdier, 1875. Red, flowering in corymbs; short, reddish wood.
<i>Dévième Lamy</i> , mod.	H.P.	Lévêque, 1863. Carmine-red, well formed; a good sort.	<i>Duchess of Bedford</i> , mod.	H.P.	Dunand, 1874. (Given by the raiser to Schwartz, by him sold to Henry Bennett, who sent it out.) Belongs to Jules Margottin type. Pink; not valuable.	<i>Edouard André</i> , free	H.P.	E. Verdier, 1879. Red, tinged with purple.
<i>Devoniensis</i> , mod. or free	T.	Foster, 1841. (Sent out by Lucombe, Pince, & Co.) Raised from Yellow Tea. Creamy white, centre sometimes tinged with blush, very large, almost full; one of the most delightfully scented. Either this or the climbing variety should be in every collection, though neither are very productive.	<i>Duchess of Edinburgh</i> , mod.	H.P.	Nabonnand, 1874. (Sent out by Veitch) Raised from Souvenir du David d'Angers A Bengal with Tea blood Crimson, turning lighter as the bud expands; of good size, moderately full.	<i>Edouard Desfosse</i> , free	B.	Renard-Courtier, 1840. Carmine-rose, medium size, double or nearly full, fragrant. An excellent Rose.
<i>Diana</i>	H.P.	W. Paul, 1874. Deep pink.			Margottin, 1861. (Sent out by Wood.) Rosy red, medium size, cup-shaped; a shy bloomer, and not valuable.	<i>Edouard Dufour</i> , free	H.P.	Lévêque, 1877. Raised from Annie Wood. Crimson, tinged with purple.
<i>Dingee-Osnard</i> , mod.	H.P.	E. Verdier, 1875. Violet-crimson, illumined with red, medium size, compact.	<i>Duchess of Norfolk</i> , free	H.P.	Laffay, 1840. Rosy pink, large, full; shy in autumn.	<i>Edouard Jesse</i> , free	H.P.	Deep rose, small, double.
<i>Dr. Andry</i> , free	H.P.	E. Verdier, 1864. Rosy crimson, large, semi-cupped flowers, double, sometimes full, fades badly; foliage large and glossy; wood moderately smooth; thorns large and red. A better Rose in England than in this country.	<i>Duchess of Sutherland</i> , vig.	H.P.	Bennett, 1879. Raised from President x Marquise de Castellane. Satiny pink, shaded with rose; sometimes the colour is carmine-rose; large, full flowers. With a faint Tea odour. The flowers are apt to be irregular and not of good finish; the buds are generally good. Subject to mildew.	<i>Edouard Morren</i> , vig.	H.P.	Granger, 1868. (Sent out by Charles Lee.) Raised from Jules Margottin. Deep cherry-rose, large, flat flowers, very full; sometimes comes with a green centre. A fine sort when well grown.
<i>Doctor Arnal</i> , dwf.	H.P.	Roser, 1848. Red, shaded with crimson; medium or small size; a free bloomer, subject to mildew.	<i>Duchess of Westminster</i> , mod. or dwf.	H.T.	Bennett, 1879. Raised from President x Louis Van Houthe. Rosy crimson, large, full, well formed, good in bud, almost without fragrance; the buds do not always open. A fine Rose when well grown, but it will never be useful for ordinary cultivators.	<i>Edouard Pynart</i> , free	H.P.	Schwartz, 1877. Raised from Antoine Ducher. Red, shaded with crimson-purple, a bad colour; medium or small size, fragrant.
<i>Dr. Berthet</i>	T.	Pernet, 1878. Pale rose, deeper in centre.			G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn. In England this is one of the finest dark Roses; we have seen it in grand form at the raiser's, but it has no value for outdoor culture in this country.	<i>Egeria</i> , dwf. or mod.	H.P.	Schwartz, 1878. (Sent out by Bennett.) Raised from Jules Margottin. Salmon-pink, a very lovely shade; medium size, full, semi-globular; not of good constitution. For experienced cultivators this is a superb sort.
<i>Dr. Chalus</i> , free	H.P.	Touvais, 1871. Vermilion, shaded with crimson; large, double or full, fragrant; a good seed-bearer.	<i>Duke of Albany</i>	H.P.	Bennett, 1879. Raised from President x General Jacqueminot. Bright crimson, large, double flowers, little fragrance; foliage large and attractive. Occasionally this is very fine early in the season, but the flowers lack substance and durability of colour. It is more shy in the autumn than the parent; not to be commended for general culture.	<i>Elic Morel</i> , mod.	H.P.	Boucharlat, 1867. (Sent out by Liabaud.) Lilac-rose, full, fragrant; green wood, with occasional red spines; the character of its growth is not pleasing. Shy in autumn.
<i>Doctor Hénon</i> , dwf.	H.P.	Lille, 1855. White, centre shaded, medium size, full; often malformed, and subject to mildew. Belongs to the old Portland group.	<i>Duke of Connaught</i> , mod.	H.P.	G. Paul, 1863. Raised from General Jacqueminot. Bright crimson, large, double flowers, little fragrance; foliage large and attractive. Occasionally this is very fine early in the season, but the flowers lack substance and durability of colour. It is more shy in the autumn than the parent; not to be commended for general culture.	<i>Elise Flory</i> , mod.	Beng.	Guillot-père, 1852. Shaded rose.
<i>Doctor Hogg</i> , free	H.P.	Laxton, 1880. (Sent out by George Paul.) Deep violet-red, medium size.	<i>Duke of Cornwall</i> , dwf. or mod.	H.T.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Elise Sauvage</i> , dwf. (L'enfan trouvé)	T.	Mielze, 1818. Orange-yellow, medium size, full.
<i>Doctor Hooker</i> , free.	H.P.	G. Paul, 1876. Raised from Duke of Edinburgh. Crimson, with a shade of velvety purple.			Bennett, 1879. Raised from President x Louis Van Houthe. Rosy crimson, large, full, well formed, good in bud, almost without fragrance; the buds do not always open. A fine Rose when well grown, but it will never be useful for ordinary cultivators.	<i>Elise Boelle</i> , mod. or dwf.	H.N.	Guillot-père, 1869. White, delicately tinged with pink, medium size, full, beautiful circular form; light green wood, armed with numerous small spines. A lovely Rose.
<i>Doctor Kane</i> , vig. or free.	N.	Pentland, 1856. Sulphur-yellow, large, fine flowers; difficult to grow well.	<i>Duke of Devonshire</i> , dwf. or mod.	H.T.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Elizabeth Vigneron</i> , free	H.P.	Vignerons, 1865. (Sent out by W. Paul.) Raised from Duchess of Sutherland. Bright pink, fragrant; an inferior Miss Hassard.
<i>Doctor Marx</i> , mod.	H.P.	Laffay, 1842. Red, tinged with violet; a bad shade.	<i>Duke of Edinburgh</i> , vig.	H.P.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Emile Courtier</i> , free	B.	Portemer. Bright red, a good seed-bearer.
<i>Doctor Sewell</i>	H.P.	Turner, 1879. Bright crimson, tinged with purple, large, full. A good Rose.			G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Emilia Plantier</i> , free	H.N.	Schwartz, 1878. Yellowish white, semi-double, sometimes double, ill formed; utterly worthless.
<i>Double Margined Hep</i> , free	Dam.	White, tinged with pink, flat form, full; good.			G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Emilie Hausburg</i> , free	H.Ch.	Lévêque, 1868. Lilac-rose, a muddy shade; large, full, globular form, fragrant. Its bad colour destroys its usefulness.
<i>Douglass</i> , free	Beng.	V. Verdier, 1848. Crimson, medium size, double, fine in the bud. A valuable variety for house culture.	<i>Duke of Devonshire</i> , dwf. or mod.	H.T.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Emily Laxton</i>	H.P.	Laxton, 1877. (Sent out by G. Paul.) Belongs to Jules Margottin type. Cherry-rose, good in the bud.
<i>Duarte d'Oliveira</i> , vig.	N.	Brassac, 1880. Raised from Ophiré x Rêve d'Oir. Salmon-rose, coppery at base, medium size, full.	<i>Duke of Edinburgh</i> , vig.	H.P.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Empereur de Maroc</i> , mod.	H.P.	Guinoiseau, 1858. (Sent out by E. Verdier.) Belongs to Giant of Battles type. Crimson, tinged with purple.
<i>Duc d'Aumale</i> , free. (General Duc d'Aumale)	H.P.	E. Verdier, 1875. Crimson; a good sort, not unlike Maurice Bernardin.			G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Empereur de Brésil</i>	H.P.	Souperet & Notting, 1880. Magenta-red.
<i>Duc de Cazes</i> , free	H.P.	Touvais, 1860. Violet-crimson, not a pure shade; double; numerous stout thorns.	<i>Duke of Devonshire</i> , dwf. or mod.	H.T.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Empress of India</i> , free	H.P.	Laxton, 1876. (Sent out by G. Paul.) Raised from Triomphe des Beaux Arts. Brownish crimson, medium size, globular, fragrant; dark green foliage, spines light coloured. Many of the buds do not open well, and it is shy in the autumn; a splendid sort when perfect.
<i>Duc de Magenta</i> , free	T.	Margottin, 1859. Flesh, shaded with fawn, thick petals, full. A large, good Tea.	<i>Duke of Teck</i> , vig.	H.P.	G. Paul, 1875. Deep, velvety crimson, with a fiery flush; medium size, full, well formed; burns badly, very shy in autumn	<i>Ernest Prince</i>	H.P.	Ducher & Scur, 1881. Raised from Antoine Ducher. Red, shaded in centre.
<i>Duc de Montpensier</i> , free	H.P.	Lévêque, 1876. Red, shaded with crimson; a good sort.	<i>Duke of Wellington</i> , mod.	H.P.	Granger, 1864. Red, shaded with crimson.			
<i>Duc de Rohan</i> , free	H.P.	Lévêque. 1861. Vermilion, large, well formed.	<i>Dunnacus</i> , mod.	H.P.	Moreau-Robert, 1880. Raised from Countess of Oxford Carmine-red			
<i>Ducher</i> , free	Beng.	Ducher, 1869. Pure white, well formed.	<i>Dupetit Thouars</i> , vig.	B.	Portemer, 1844. Raised from Emile Courtier. Deep red,			
<i>Duchesse de Cambrésis</i> , vig.	H.P.	Fontaine, 1854. Lilac-rose, impure colour; double.						
<i>Duchesse de Caylus</i> , mod.	H.P.	C. Verdier, 1864. Rosy crimson, large, double.						
<i>Duchesse de Chartres</i>	H.P.	E. Verdier. 1875. Bright rose.						
<i>Duchesse d'Istrie</i> , mod.	M.	Portemer, 1857. Rose colour, not valuable.						

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<i>Etienne Dupuy</i> , vig.	H.Ch.	<i>Francois Gaulain</i>	H.P.	<i>Giant of Battles</i> , dwf. — (continued).	H.P.
<i>Etienne Levet</i> , mod.	H.P.	<i>Francois Herincq</i>	H.P.	<i>Gigantesque</i> , free	T.
<i>Etna</i> , mod.	M.	<i>Francois Lacharme</i> , free	H.P.	<i>Gloire de Bordeaux</i> , vig.	Cl.T.
<i>Etoile de Lyon</i>	T.	<i>Francois Louvat</i>	H.P.	<i>Gloire de Bourg-la-Reine</i> , mod.	H.P.
<i>Eugène Appert</i> , dwf. or mod.	H.P.	<i>Francois Levet</i>	H.P.	<i>Gloire de Dijon</i> , vig.	Cl.T.
<i>Eugène Beauharnais</i> , mod.	Beng.	<i>Francois Michelin</i> , free	H.P.	<i>Gloire de Duclier</i> , vig.	H.P.
<i>Eugène Guinoiseau</i> , mod.	M.			<i>Gloire de Paris</i>	H.P.
<i>Eugène Pirolle</i> , vig. (Admiral Rigney)	N.	<i>Francois Premier</i> , mod.	H.P.	<i>Gloire des Rosamances</i> , free	B.
<i>Eugénie Verdier</i> , dwf.	H.P.	<i>Francois Treype</i>	H.P.	<i>Gloire de Santenay</i> , free or mod.	H.P.
<i>Evêque de Nîmes</i> , mod.	H.P.	<i>Gabriel Tournier</i> , free	H.P.	<i>Gloire de Vitry</i> , free	H.P.
<i>Exposition de Erie</i>	H.P.	<i>Gaston Lévêque</i> , free or mod.	H.P.	<i>Glory of Cheshunt</i> , vig.	H.P.
<i>Fabvier</i>	Beng.	<i>Gem of the Prairies</i> , free.	P.	<i>Glory of Mosses</i> , mod.	M.
<i>Felicien David</i>	H.P.	<i>General Duc d'Aumale</i>	H.Ch.	<i>Glory of Waltham</i>	H.Cl.
<i>Félicité Perpetuelle</i> , vig.	Ev.	<i>General Jacquinot</i> , mod.	H.P.	<i>Goubault</i> , free or mod.	T.
<i>Felix Genaro</i>	H.P.	<i>General Jacquinot</i> , mod.	H.P.	<i>Gracilis</i> , free. (Præ-lific)	M.
<i>Fellenberg</i> , vig.	N.			<i>Great Western</i> , free	H.Ch.
<i>Ferdinand Chaffotte</i>	H.P.	<i>General Simpson</i> , free	H.P.	<i>Gréville</i> , vig. (Seven Sisters)	Mult.
<i>Ferdinand de Lesseps</i> , free	H.P.	<i>General Tartas</i> , free	T.	<i>Guillaume Gillemont</i>	H.P.
<i>Firebrand</i> , dwf.	H.P.	<i>General Von Moltke</i> , mod.	H.P.	<i>Gustave Thierry</i>	H.P.
<i>Fisher Holmes</i> , free	H.P.	<i>General Washing-ton</i> , mod.	H.P.	<i>Harrison Weir</i> , free or mod.	H.P.
<i>Flag of the Union</i>	T.	<i>Génie de Châteaubriand</i> , free or mod.	H.P.	<i>Harrison's Yellow</i> , free	A.
<i>Flarecense</i> , mod. (Yellow Tea)	T.	<i>George Baker</i>	H.P.	<i>Helen Paul</i>	H.P.
<i>Flora Nabonand</i> , mod.	T.	<i>George Moreau</i> , vig.	H.P.	<i>Helvetia</i>	T.
<i>Fontenelle</i> , mod.	M.	<i>George Peabody</i> , mod.	B.	<i>Henri Lecog</i> , dwf.	T.
<i>Fontenelle</i>	H.P.	<i>George Prince</i> , free or vig.	H.P.	<i>Henri Ledéchaux</i> , dwf.	H.P.
<i>Fortunei</i> , vig.	Bk.	<i>George the Fourth</i> , vig.	H.Ch.	<i>Henri Martin</i>	M.
<i>Fortune's Double Yellow</i> , vig.	Bk.	<i>George Vibert</i> , free	Prov.	<i>Henry Bennett</i> , mod.	H.P.
<i>Francois Arago</i> , mod.	H.P.	<i>Gérard Desbois</i> , vig.	T.	<i>Hermosa</i> , mod. (Armosa, or Scitina)	B.
<i>Francois Courtin</i> , free	H.P.	<i>Giant of Battles</i> , dwf.	H.P.	<i>Hippolyte Jamain</i> , mod.	H.P.
<i>Francois Fontaine</i> , mod.	H.P.				

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Homer, vig.	T.	Morreau-Robert, 1850. Salmon-rose, often richly mottled; a free bloomer, moderately hardy, best in the open air; the buds are very beautiful, even though of variable shades. Certainly one of the most useful Tea Roses.	Jean Liabaud, free	H.P.	Liabaud, 1875. A seedling from Baron de Bonstetten. Crimson-maroon, illumined with scarlet, large, full; a lovely Rose, but shy in the autumn.	La France, mod.—(continued)	H.T.	of all Roses. If the buds remain firm, by pressing gently the point and blowing into the centre, the flowers will almost invariably expand. An invaluable sort.
Hon. George Bancroft, dwf. or mod.	H.T.	Bennett, 1879. From Madame de St. Joseph x Lord Macaulay. Red, shaded with violet-crimson, large, full flowers, and good pointed buds; often comes malformed; highly scented, a combination of the perfumes found in the parent varieties; the wood is nearly smooth, the foliage is large, dark, and handsome. The colour is not deep enough, and is too sullied to make this of value for winter forcing.	Jean Lorthois, free or vig.	T.	Madame Ducher, 1879. Rose, reverse of the petals silvery pink.	La Grandeur, free or vig.	T.	Nabonnand, 1877. Violet-rose, very large, full.
			Jean Monford, vig.	M.	Robert, 1852. Rose colour, quite pretty in bud, subject to mildew, not free.	La Jonquille, mod.	T.	Ducher, 1871. Raised from Lamarque. Jonquil-yellow, semi-double, sometimes single; medium or small size.
			Jean Pernet, free	T.	Pernet, 1867. Light yellow, suffused with salmon, beautiful buds; a fine Tea, but is now surpassed by Perle des Jardins.	La Lune, mod.	T.	Nabonnand, 1878. Creamy yellow, deeper coloured centre, medium size, large petals, semi-double.
			Jean Sisley, mod.	H.T.	Bennett, 1879. Raised from President x Emilie Hausburg. Lilac-rose, large, very full, without fragrance; very subject to mildew. The colour is bad, and the buds rarely open well; it is entirely worthless.	La Motte Sanguin, mod.	H.P.	Vignerot, 1869. Carmine-red, large or very large.
					Lacharme, 1875. * Crimson-maroon, in the way of Jean Liabaud; dark green foliage, with many thorns; not free in the autumn.	La Nuancée, mod.	T.	Guillot-fils, 1875. Blush, tinged with fawn, medium size, full.
					V. Verdier, 1848. White, an inferior Lamarque.	La Princesse Vera, free	T.	Nabonnand, 1878. Flesh, bordered with coppery rose, full, well formed; a distinct good sort.
					Belongs to the old Portland group. Deep rose, tinged with violet, medium size, full, quartered shape; fragrant, very hardy, a profuse bloomer. The colour and form are bad, and destroy its usefulness.	La Reine, free or vig.	H.P.	Ladlay, 1843. Glossy rose, large, full, semi-globular form, somewhat fragrant; the foliage slightly crimped, five to seven leaflets. A very hardy, useful Rose, though no longer the queen.
					G. Paul, 1878. Bright crimson, medium size.	La Rosire, free	H.P.	Damaizin, 1874. Belongs to the Prince Camille type. Crimson; the flowers are identical in colour and form with Prince Camille, but seem a little fuller, and are more freely produced; the habit of growth, too, seems somewhat straggler; it may usurp the place of its rival.
					E. Verrier, 1862. Violet-red, medium size.	La Saumonée, vig.	H.C.I.	Margottin, 1877. Belongs to the Jules Margottin type. Salmon-rose, medium size; non-autumnal.
					Ward, 1862. From Jules Margottin x Madame Vidot. Bright rose, with carmine centre, large and full, semi-globular; light red thorns, stout bushy growth. A free blooming, standard sort.	La Souveraine, vig.	H.P.	E. Verrier, 1874. Rose colour, large flowers, semi-double or double, cupped form; interior.
					E. Verrier, 1865. Red, shaded with maroon.	La Sylphide, free	T.	Laffay. Blush, with fawn centre, very large, double.
					Madame Ducher, 1878. Raised from Antoine Ducher. Red, back of petals carmine, semi-globular.	La Tulipe, mod.	T.	Ducher, 1870. Creamy white, tinted with carmine, semi-double.
					Turner, 1875. Raised from Beauty of Waltham. Rosy crimson, large, full, or double; does not bloom until late; shy in the autumn.	La Ville de Bruxelles, free	Dam.	Vibert, 1836. Rose colour, large, full, flat; branching habit.
					Madame Ducher, 1878. Yellowish white, pale yellow at centre.	Lady Emily Peel, mod. or free	H.N.	Lacharme, 1862. From Blanche Lafitte x Sappho. White, tinged with blush.
					Schwartz, 1878. Belongs to the Prince Camille type. Crimson, tinged with purple.	Lady Fordwick, free	H.Ch.	Laffay, 1838. Deep rose, cup-shaped.
					Damaizin, 1870. Bright rose; not valuable.	Lady Sheffield	H.P.	W. Paul & Son, 1881. Cherry-red.
					Madame Ducher, 1879. From Catherine Mermet x Madame de Tartas. Red, with silvery lustre; a promising sort.	Lady Stuart, free	H.Ch.	Portemer, 1852. Pink, changing to bluish; five to seven leaflets.
					Schwartz, 1879. Magenta-rose.	Lady Warrender Lalba	Beng. H.F.	See Clara Sylvia'n. Crozy, 1857. See Louise Peyronny.
					Margottin, 1853. Probably from La Reine. Carmine-rose, large, full, somewhat flat, slight fragrance; five to seven leaflets, foliage light green and somewhat crimped; wood armed with dark red thorns; free flowering and hardy.	Lamarque, vig.	N.	Marchal, 1830. White, with sulphur centre, sometimes pure white, very large, full, somewhat fragrant, generally seven leaflets. A superb climbing Rose, quite too much neglected.
					Cranston, 1864. Vermilion.	Lamarque à fleurs jaunes, free.	N.	Ducher, 1871. Pale yellow, medium size, in the style of the former sort, but inferior in all respects.
					V. Verdier, 1862. Bright crimson, a clear shade, large double, fragrant; a free bloomer.	Lanei	M.	Laffay, 1854. (Sent out by Lane & Son.) Red, good foliage, with five leaflets; not subject to mildew; propagates with great difficulty from cuttings.
					Lacharme, 1879. From Victor Verdier x Sombreuil. Salmon-pink, in the style of Captain Christy; a promising sort.	L'Éblouissante, mod.	H.P.	Touvais, 1861. Rosy crimson, very large, double.
					Feast, 1843. Pale rose.	L'Espérance, free	H.P.	Fontaine, 1871. Cherry-red, large, full, flat form, fragrant.
					Cranston, 1864. Vermilion.	L'Enfant du Mont Carmel, vig.	H.P.	Cheppin, 1851. (Sent out by Ducher.) Violet-rose, a muddy shade, large, full, flat form; fragrant, red spines; inclined to mildew.
					V. Verdier, 1862. Bright crimson, a clear shade, large double, fragrant; a free bloomer.	Le Havre, mod.	H.P.	Eude, 1871. Vermilion, beautifully formed.
					Guinoisseau, 1855. Red, tinged with violet.	Le Mont Blanc, mod.	T.	Ducher, 1869. Pale lemon-yellow, growing lighter as the flowers expand; good in the bud.
					Guillot-fils, 1867. From seed of a Tea Rose. Silvery rose, changing to pink, very large, full, globular; a constant bloomer, and the sweetest	Le Nankin, mod. or dwf.	T.	Ducher, 1871. Pale yellow, shaded coppery yellow; pretty in the bud state; rather delicate habit.

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<i>L. Pactole</i> , dwf. or mod.	T.	Madame Pean. From Lamarque x Yellow Tea. Very pale yellow, beautiful buds.		<i>Mme. Caradori Albin</i> , vig.	P.	Feast, 1843. Bright pink, semi-double.	
<i>L. Elaine</i> , free or mod.	H.P.	Guillot-fils, 1862. Raised from General Jacqueminot. Vermilion, tinged with crimson, large, well formed.		<i>Mme. Caro</i>	T.	Levet, 1880. Salmon-yellow, medium size.	
<i>L. La. (Painted Damask)</i>	Dam.	Blush, edged with lake.		<i>Mme. Caroline Kuster</i> , free	N.	Pernet, 1873. Pale yellow, often mottled with rose; a free-blooming, excellent shrub Rose; one of the best bedding kinds.	
<i>Leen Remart</i> , free or vig.	H.P.	Madame Ledéchaux, 1778. Cherry-red, very large, full; promises well.		<i>Mme. Celina Noirey</i> , vig.	T.	Guillot-fils, 1868. Salmon, the outer petals washed-out pink; very large, very full; a coarse flower, of dirty shade.	
<i>L. Gold Hamburg</i> , free	H.P.	Granger, 1863. Belongs to Jacqueminot type. Deep violet-red, a bad colour.		<i>Mme. Charles</i> , free	T.	Damaizin, 1864. Raised from Safrano. Apricot colour; in the way of Mme. Falcot.	
<i>L. Gold Premier</i> , free	H.P.	Vanasse, 1863. Belongs to Jacqueminot type. Deep red shaded crimson, thorns not very numerous; a good sort, but not free in the autumn.		<i>Mme. Charles Crapelet</i> , vig.	H.P.	Fontaine, 1859. Cherry-red, medium or large size, fragrant and good; wood armed with numerous thorns.	
<i>Lilly Gales</i> , free	T.	Keynes, 1876. A sport from Madame Willermoz. White, with pink centre.		<i>Mme. Charles Verdier</i> , free or vig.	H.P.	Lacharme, 1864. Belongs to the Baronne Prévost type. Rosy vermillion, very large, a free bloomer.	
<i>Leveson Gower</i> , mod.	B.	Beluze, 1846. Deep rose, tinged with salmon, the flowers are of the same character as Malmaison.		<i>Mme. Charles Wood</i> , dwf.	H.P.	E. Verdier, 1861. Reddish crimson, large or very large, nearly full; one of the freest flowering kinds, but not of first quality. Occasionally, as with General Washington, some first-rate blooms are produced.	
<i>Lion des Combats</i> , free or mod.	H.P.	Lartay, 1851. Violet-rose, double, subject to mildew; worthless.				Fontaine, 1871. Cherry-red.	
<i>Little Gem</i> , dwf.	M.	W. Paul, 1880. Crimson, very small, full; a miniature sort.				Léveque, 1880. Canary-yellow, thought to be a valuable variety for the buds; probably in the style of Isabella Sprunt.	
<i>Lord Beaconsfield</i>	H.P.	Schwartz, 1878. (Sent out by Bennett.) Crimson, large, well formed.				Pernet, 1867. Rose, tinged with vermillion, full, peculiar rich scent; bushy habit, shy in autumn, many malformed flowers.	
<i>Lord Clyde</i> , mod.	H.P.	G. Paul, 1863. Rosy crimson, large, double; subject to mildew.				Liabaud, 1861. Rose, tinged with lilac, double, large flowers.	
<i>Lord Macaulay</i> , free or mod.	H.P.	1863. (Sent out by W. Paul.) Fiery crimson, much the colour seen in Charles Lefebvre, large, double, well formed, fragrant; this is still a good Rose.				Gonod, 1868. Salmon-rose.	
<i>Lord Palmerston</i> , free	H.P.	Margottin, 1858. Carmine-red, tinged with vermillion, double, well formed; bushy habit, light green wood and foliage, a few high-coloured spines. A good garden Rose.				Levet, 1881. Raised from Souvenir de la Reine d'Angleterre. Rose colour, very large.	
<i>Lord Raglan</i> , mod.	H.P.	Guillot-père, 1854. Raised from Giant of Battles. Burgundy crimson, a lovely shade; tender and shy in autumn.				Guillot-fils, 1881. Violet-rose, tinged with yellow.	
<i>Louis XIV.</i> , dwf.	H.P.	Guillot-fils, 1859. Raised from General Jacqueminot. Rich crimson, double; a beautiful shade.				Damaizin, 1858. Creamy white, shaded salmon, very large, double; not well formed.	
<i>Louis Barlet</i> , free	T.	Mme. Ducher, 1875. Pale yellow, tinged with fawn.				Liabaud, 1877. Rosy pink, somewhat fragrant; bushy habit; long, rather small foliage; wood thickly covered with dark brown thorns; not very promising.	
<i>Louis Chaix</i> , dwf.	H.P.	Lacharme, 1857. Raised from Giant of Battles. Crimson.				Margottin, 1871. Red, shaded with violet-crimson; large, full, fine, globular form; green wood and thorns. A distinct sort, fragrant and beautiful, but fades easily.	
<i>Louis Doré</i> , mod. or free	H.P.	Fontaine, 1878. Red, large, full; little or no fragrance, bushy growth.				Fawn, shaded salmon, large, full, highly scented; not well formed.	
<i>Louis Philippe</i> , mod.	Beng.	Crimson; an inferior Agrippina.				Gautreau, 1871. Raised from Catherine Guillot. Rosy vermillion tinged with lilac, large, globular; well formed.	
<i>Louis Richard</i> , free	T.	Mme. Ducher, 1877. Coppery rose, the centre sometimes deep red.				Bernède, Rose colour, double.	
<i>Louis Van Houtte</i> , free	H.P.	Granger, 1863. Red, tinged with crimson, red-tish thorns; not of first quality.				Red, shaded with salmon, of good form, both in bud and flower, and well scented; a very choice old sort.	
<i>Louis Van Houtte</i> , dwf. or mod.	H.P.	Lacharme, 1869. Said to be from Charles Lefebvre. Crimson-maroon, medium size, sometimes large, full, semi-globular form; large foliage, fewer thorns than most other dark Roses, highly perfumed. This is a tender sort, but it is very free blooming, and decidedly the finest crimson yet sent out.				Madame Giraud, 1853. (Sent out by Van Houtte.) A sport from Baronne Prévost. Blush-white, striped with deep rose.	
<i>Louis d'Arzens</i> , mod. or free	H.N.	Lacharme, 1861. White tinged with blush; superseded by Coquette des Blanches.				Mme. Ducher, 1874. Canary-yellow, medium size.	
<i>Louise de Savoie</i> , mod.	T.	Ducher, 1855. Pale yellow, beautiful buds; much like Le Pactole.				Pernet, 1876. Raised from Victor Verdier. Salmon-rose.	
<i>Louise Odier</i> , vig.	B.	Margottin, 1851. Bright rose, medium size, full, well formed, hardy.				Margottin, 1853. Bright rose, large, loose flowers, very thorny; not valuable.	
<i>Louise Peyronny</i> , mod. (Lelia)	H.P.	Lacharme, 1851. Raised from La Reine. Silvery rose.				Levet, 1879. Silvery rose, medium size, double.	
<i>Lyonnaise</i> , mod.	H.P.	Lacharme, 1871. Belongs to the Victor Verdier type. Pink, with deeper centre, fades quickly; a coarse inferior sort.				Ducher, 1869. Creamy yellow, medium size.	
<i>Ma Capucine</i> , dwf.	T.	Levet, 1871. Raised from the Noisette Ophiré. Nasturtium yellow, beautiful buds; a very distinct Rose, which, from its delicate habit, is useless for ordinary cultivators to attempt growing.				Moreau-Robert, 1854. Carmine-red, of medium size, full; one of the best in the class, which is not saying much for the class.	
<i>Mabel Morrison</i> , mod.	H.P.	Broughton, 1878. (Sent out by Bennett.) A sport from				Nabonnand, 1881. Clear rose, flowers said to be in the style of Niphetos.	
						Levet, 1870. Salmon, sometimes pale fawn, large, full; not attractive.	

NAME OF VARIETY AND HABIT OF GROWTH	CLASS		NAME OF VARIETY AND HABIT OF GROWTH	CLASS		NAME OF VARIETY AND HABIT OF GROWTH	CLASS	
<i>Mme. Etienne Levet</i> , dwf.	H.T.	Levet, 1878. Cherry-red, sometimes having a coppery shade, small size, pretty in the bud; slightly scented, agreeable odour.	<i>Mme. Lacharme</i> , dwf.—(continued)	H.P.	well, and is shy in the autumn. Of bushy growth, and quite hardy.	<i>Mme. Pauline La-bonté</i> , free	T.	Pradel, 1852. Salmon-rose, large, full, and good in the bud; an excellent sort.
<i>Mme. Eugène Cham-beyran</i> , mod.	H.P.	Gonod, 1878. Belongs to the Victor Verdier type. Rose, tinged with violet, sometimes salmon-rose.	<i>Mme. Lafay</i> , free	H.P.	Lafay, 1839. Rose colour, large, double, cupped form, red spines; surpassed by many others of the same shade.	<i>Mme. Pierre Oger</i> , vig.	B.	Oger, 1878. (Sent out by C. Verdier.) A sport from Reine Victoria. Blush, the exterior of petals tinged with rosy lilac, cupped form, not a free bloomer.
<i>Mme. Eugène Ver-dier</i> , free or mod.	H.P.	E. Verdier, 1878. Belongs to La Reine type. Mottled rose, very large, full, globular; a promising kind.	<i>Mme. Lambard</i> , vig.	T.	Lacharme, 1877. Rosy salmon, deepening towards the centre; the colour is variable, sometimes being a rosy flesh; the flowers are large, very full, and good. This variety is not so refined as many others, but is of excellent habit, free blooming qualities, and is considered one of our most useful Teas.	<i>Mme. Plantier</i> , free	H.Ch.	Plantier, 1835. Pure white, above medium size, full, flat form, seven leaflets, foliage rather small; one of the best white roses for hedges and for massing. Early in the season the flowers are produced in great abundance.
<i>Mme. Falcot</i> , mod.	T.	Guillot-fils, 1858. Raised from Safrano. Deep apricot; resembles the parent, but is somewhat larger, more double, of deeper shade, less productive, and of weaker growth.	<i>Mme. Landeau</i> , mod.	P.M.	Moreau-Robert, 1873. Red, medium size, full; not valuable.	<i>Mme. Prosper Lau-gier</i> , free	H.P.	E. Verdier, 1875. Red, quartered shape, not fragrant, numerous red thorns; of second quality.
<i>Mme. Ferdinand Jamin</i> , mod.	H.P.	Lédéchaux, 1875. Deep rose, cupped form, highly scented.	<i>Mme. Laurent</i> , vig.	H.P.	Granger, 1871. Cherry-red.	<i>Mme. Récamier</i> , dwf.	H.N.	Lacharme, 1853. Blush white, medium size, well formed. The origin of this Rose is unknown; probably it is the result of a natural cross with some Noisette on a Bourbon.
<i>Mme. Fortunée Bes-son</i> .	H.P.	Besson, 1881. Raised from Jules Margottin. Carmine-rose.	<i>Mme. Léon de St. Jean</i> , mod.	T.	Lever, 1875. Pale yellow, very fragrant, poor form.			Guillot-père, 1850. Blush; a pretty sort, but of unhealthy habit and quite tender.
<i>Mme. François Ja-min</i> , dwf. or mod.	T.	Lédéchaux, 1872. Orange-yellow, small size, buds of exquisite shape; very distinct, both in colour and its peculiar fragrance.	<i>Mme. Levat</i> , vig.	Cl.T.	Levet, 1869. Raised from Gloire de Dijon. Very much like the parent, but inferior to it.	<i>Mme. Rivers</i> , mod.	H.P.	Vignerot, 1871. Raised from General Jacqueminot. Red, tinged with lilac.
<i>Mme. François Pit-tet</i> , mod.	H.N.	Lacharme, 1877. Pure white, small.	<i>Mme. Lilienthal</i>	H.P.	Liabaud, 1878. Bright rose, tinged with salmon.	<i>Mme. Rosalie de Wincop</i>	H.P.	Cochet, 1871. Cherry-rose.
<i>Mme. Freeman</i> , mod.	H.N.	Guillot-père, 1862. White, tinged with pink.	<i>Mme. Laben Sels</i> , mod.	H.T.	Souper & Notting, 1879. Silvery white, shaded with rose, large, full, somewhat flat form.	<i>Mme. Scipion Cochet</i> , vig.	H.P.	See Madame Bravy.
<i>Mme. Frémion</i> , mod.	H.P.	Margottin, 1850. Cherry-red, cup-shaped, fragrant.	<i>Mme. Louis Carie-gues</i> , vig.	H.P.	Fontaine, 1859. Rosy crimson, double, free in autumn; not of first quality.	<i>Mme. Sertat</i>	T.	Levet, 1876. Bright rose, nearly smooth wood; a shy autumnal and not of first quality.
<i>Mme. Gabriel Lut-zet</i> , vig.	H.P.	Liabaud, 1878. Belongs to Jules Margottin type. Pink, somewhat fragrant, long foliage; a promising kind, worthy of attention.	<i>Mme. Louis Dona-dine</i> , dwf. or mod.	H.P.	Gonod, 1877. A sport from Countess of Oxford. Nearly the shade of Eugénie Verdier.	<i>Mme. Sophie Fropot</i> , vig.	H.P.	Jamain, 1877. Bright red, free blooming.
<i>Mme. Gaillard</i> , mod.	T.	Ducher, 1870. Salmon-yellow, large, somewhat coarse.	<i>Mme. Louis Henry</i> , vig.	N.	Mme. Ducher, 1879. Pale yellow, fragrant; in the way of Solfafterre.	<i>Mme. Thévenot</i> , free	H.P.	Levet, 1869. Raised from Gloire de Dijon. Fawn and yellow; resembles the parent, but inferior to it in value.
<i>Madame George Schwaertz</i> , mod.	H.P.	Schwartz, 1871. Belongs to the Victor Verdier type. Silvery rose, fades badly and is coarse.	<i>Mme. Louis Li-évéque</i> , mod.	H.P.	Lévéque, 1874. Belongs to the Jules Margottin type. Carmine-rose, large, very full, somewhat flat form, slightly fragrant; blooms late in the season, but is shy in the autumn.	<i>Mme. Trifle</i> , vig.	Cl.T.	Granger, 1855. Bright red, medium size, a free bloomer in the spring.
<i>Mme. Gustave Bon-net</i> , free.	H.N.	Lacharme, 1860. From Blanche Lafitte × Sappho. White, tinged with pink; surpassed by others of the class.	<i>Mme. Margottin</i> , mod.	T.	Guillot-fils, 1866. Citron-yellow, sometimes with coppery centre, large, full, many mal-formed flowers, fine when perfect.	<i>Mme. Trudeau</i> , free	H.P.	Daniel Boll, 1850. Rose, tinged with lilac, medium size, well formed, free flowering, mildews badly.
<i>Mme. Hardy</i> , vig.	Dam.	Hardy, 1832. White, large, very full, flat form, very fragrant; sometimes comes with green centre, but very beautiful when in perfection. A difficult sort to grow from cuttings.	<i>Mme. Marie Bianche</i>	H.P.	Guillot-fils, 1881. Raised from Victor Verdier × Virginal. Blush, tinged with lilac, fragrant.	<i>Mme. Victor Verdier</i> , mod. or free	H.P.	V. Verdier, 1863. Carmine-crimson, large, full, fine, globular form, very fragrant; a superb Rose.
<i>Mme. Hippolyte Ja-main</i> , mod.	H.P.	Garcon, 1871. (Sent out by Jamain.) White, tinged with rose, very large, full.	<i>Mme. Marie Girodte</i> , mod.	H.P.	C. Verdier, 1867. Salmon-pink.	<i>Mme. Vidot</i> , dwf.	H.P.	Couturier, 1854. (Sent out by E. Verdier.) Flesh colour, full, well formed; a beautiful Rose of very delicate constitution.
<i>Mme. Hippolyte Ja-main</i> , free	T.	Guillot-fils, 1869. White, tinged in the centre with yellow, large, full.	<i>Mme. Marie Roderer</i>	H.P.	Lévéque, 1881. Raised from Jules Margottin. Cherry-red.	<i>Mme. Welche</i> , mod.	T.	Madame Ducher, 1878. (Sent out by Bennett.) Raised from Devoniensis × Souvenir d'un Ami. Pale yellow, the centre coppery-yellow, large and full; a very distinct Tea.
<i>Mme. Hoche</i> , mod. or dwf.	M.	Moreau-Robert, 1859. White, superseded by White Bath.	<i>Mme. Marie Finger</i> , dwf.	H.P.	Rambaux, 1873. (Sent out by Lacharme.) Almost identical with Eugénie Verdier.	<i>Mme. Zotman</i> , mod. or free	Dam.	Delicate flesh, changing to white, large, very full, flat form, fragrant, five to seven leaflets; a fine white Rose.
<i>Mme. Humbeulle</i> , free.	H.P.	Fontaine, 1873. Light rose, large, fragrant.	<i>Mme. Marthe d'Hal-lop</i>	H.P.	Lévéque, 1881. Raised from Madame Boutin. Cherry-red.	<i>Mlle Annie Wood</i>	H.P.	See Annie Wood.
<i>Mme. Isaac Pereire</i> , free or vig.	B.	Margottin-fils, 1880. Carmine-red, very large, full, free blooming.	<i>Mme. Maurice Rup-penheim</i> , mod.	T.	Madame Ducher, 1877. Pale yellow, shaded with apricot.	<i>Mlle. Blanche Dur-schmidt</i> , free	T.	Guillot-fils, 1877. Raised from Madame Falcot. Flesh colour, semi-double, worthless.
<i>Mme. Jeanne Joub-ert</i> , vig.	B.	Margottin, 1877. Red, medium size, non-autumnal.	<i>Mme. Maurin</i> , free	T.	Guillot-père, 1853. Creamy white, large; not very reliable.	<i>Mlle. Bonnaire</i> , dwf.	H.N.	Pernet, 1869. Closely resembles Madame Noman; it is difficult to see any points of difference by which one may be distinguished from the other.
<i>Mme. Jolibois</i> , mod.	H.P.	E. Verdier, 1879. Silvery rose, medium size, full.	<i>Mme. Maxime de la Rocheterie</i>	H.P.	T. Grangé, 1880. (Sent out by Vignerot.) Raised from Victor Verdier. Carmine-rose.			Levet, 1878. Silvery rose, slightly tinged with lilac; not highly scented, but quite a pleasing sort.
<i>Mme. Joly</i> , free	H.P.	Rose colour, medium size, semi-cupped, fragrant, and well formed; seems to be of Bourbon origin.	<i>Mme. Melanie Wil-lermoz</i> , free	T.	Lacharme, 1845. Creamy white, thick petals, large, full, little fragrance; an excellent sort for out-of-door culture.			Guillot-fils, 1871. Sulphur-yellow, medium size, pretty in the bud.
<i>Mme. Joseph Hal-phen</i> , mod.	T.	Margottin, 1859. Blush, medium size.	<i>Mme. Miolan Car-catho</i> , free or vig.	N.	Lévéque, 1876. Raised from Chromatella. Sulphur yellow	<i>Mlle. Brigitte Vio-let</i> , mod.	H.T.	Madame Ducher, 1880. Salmon-pink, deeper in the centre, very small, full, delicately scented; an exquisite miniature Rose for floral work, opera bouquets, &c.
<i>Madame Joseph Schwartz</i> , free	T.	Schwartz, 1880. From Comtesse de Labarthe. Blush, the edge of petals tinged with carmine.	<i>Mme. Montet</i>	H.P.	Liabaud, 1880. Light pink, large petals.			Liabaud, 1876. Raised from Souvenir de la Reine d'Angleterre. Carmine-rose, medium size, semi-globular form, fragrant; there are seven leaflets of light green colour, rather crimped; the shoots are armed with small spines of pale green. An excellent summer Rose.
<i>Mme. John Twom-bly</i> , free	H.P.	Schwartz, 1881. Vermilion-red, said to have some resemblance to Alfred Colomb.	<i>Mme. Moreau</i> , mod.	H.P.	Gonod. Red, shaded with violet.	<i>Mlle. Cécile Ber-thod</i> , dwf. or mod.	T.	Damaizin, 1872. Belongs to the Victor Verdier type. Rose colour, somewhat in the way of Lyonnaise; of no value.
<i>Mme. Jules Grévy</i>	H.P.	Schwartz, 1881. From Triomphe de l'Exposition × Madame Falcot. Salmon-pink.	<i>Mme. Moreau</i> , mod.	P.M.	Moreau-Robert, 1872. Red, large, full.	<i>Mlle. Cécile Brün-ner</i> , mod. or dwf.	Pol.	
<i>Mme. Jules Margot-tin</i> , mod.	T.	Levet, 1871. Carmine-pink, tinged with lilac, very fragrant; inclined to come in rough form.	<i>Mme. Nachury</i> , vig	H.P.	Damaizin, 1873. Belongs to La Reine type. Deep rose colour, fades easily, flowers very large, rather loose, fragrant.			
<i>Mme. Julie Daran</i> , free	H.P.	Touvais, 1861. Violet-crimson, a fine colour; shy in the autumn.	<i>Mme. Noman</i> , dwf. (Mdlle. Bonnaire)	H.N.	Guillot-père, 1867. Raised from Madame Récamier. White, sometimes with shaded centre, medium size, full, globular; foliage somewhat crimped, wood armed with quite numerous small spines. A Rose of exquisite beauty.	<i>Mlle. Emma Hall</i> , mod. or free	H.Ch.	
<i>Mme. Julie Weid-man</i>	H.T.	Souper & Notting, 1880. Salmon-rose.	<i>Mme. Osvald de Ker-chove</i> , dwf.	H.N.	Schwartz, 1879. From a seedling of Mme. Récamier × Mme. Falcot. White, tinged with fawn; promises to be an addition of merit. It has all the characteristics of the Eliza Boelle type.	<i>Mlle. Fernande de la Forest</i> , mod.	H.P.	
<i>Mme. Knorr</i> , dwf.	H.P.	V. Verdier, 1855. Rose colour, medium size, full, flat form, very sweet.						
<i>Mme. de Rothschild</i>	H.P.	See Baroness Rothschild.						
<i>Mme. Lacharme</i> , dwf.	H.P.	Lacharme, 1872. Claimed to have been raised from Jules Margottin × Sombreuil. White, tinged with pink, medium size, full or very full, globular; does not open						

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<i>Mlle. Julie Dymonier</i> , dwf.	H.P.	<i>Maréchal Robert</i> , free—(continued)	T.	<i>Mary Pochin</i>	H.P.
<i>Mlle. Lazarin Desau</i> , dwf. or mod.	T.	<i>Maréchal Vaillant</i> , free	H.P.	<i>Masterpiece</i> , mod. or free	H.P.
<i>Mlle. Marguerite Lambaun</i> , free	H.P.			<i>Mathilde Lenoir</i>	C.T.
<i>Mlle. Marie Armand</i> , mod.	T.	<i>Marguerite Brassac</i>	H.P.	<i>Maurice Bernardin</i> , vig. or free	H.P.
<i>Mlle. Marie Berton</i> , vig.	C.T.	<i>Marguerite de St. Amand</i> , free	H.P.		
				<i>May Quenell</i> , dwf. or mod.	H.P.
<i>Mlle. Marie Chauvet</i>	H.P.	<i>Marie Baumann</i> , mod.	H.P.	<i>May Turner</i> , mod.	H.P.
<i>Mlle. Marie Cointet</i> , dwf.	H.P.			<i>Mélanie Oger</i> , free	T.
				<i>Mélanie Soupert</i>	T.
<i>Mlle. Marie Gonod</i> , free	H.P.	<i>Marie Caroline de Surtout</i>	T.	<i>Mère de St. Louis</i> , mod.	H.P.
<i>Mlle. Marie Raoul</i> , free	H.P.	<i>Marie de Blois</i> , free	M.	<i>Michael Bonnet</i> , free	H.P.
		<i>Marie de Bourgogne</i> , dwf.	P.M.	<i>Michael Saunders</i> , mod.	H.T.
		<i>Marie Ducher</i> , free	T.		
<i>Mlle. Rachel</i> , dwf.	T.	<i>Marie Guillot</i> , mod.	T.	<i>Mignonette</i>	Pol.
<i>Mlle. Thérèse Levet</i> , mod.	H.P.	<i>Marie Jaillet</i> , mod.	T.	<i>Miller-Hayes</i> , mod.	H.P.
<i>Mme. Charta</i> , vig.	H.Ch.	<i>Marie Louise Pernet</i> , mod.	H.P.	<i>Miss Glegg</i> , free	N.
		<i>Marie Opoiz</i> , mod.	T.	<i>Miss Hassard</i> , free	H.P.
<i>Nanetti Rose</i> , vig.		<i>Marie Sisley</i> , mod.	T.	<i>Miss Ingram</i> , free	H.Ch.
				<i>Miss May Paul</i> , vig.	C.T.
<i>Marcelin Roda</i> , mod.	T.	<i>Marie Van Houltte</i> , free	T.	<i>Miss Tweed</i> , free	A.
<i>Marchioness of Exeter</i> , free	H.P.	<i>Marie Verdier</i> , free	H.P.	<i>Modèle de Perfection</i> , mod.	B.
<i>Maréchal Forey</i> , vig. or free	H.P.	<i>Marquis de Balbia</i> , no, free	B.	<i>Mogador</i>	H.P.
<i>Maréchal Niel</i> , vig.	N.	<i>Marquis de Sanima</i> , mod.	T.		
		<i>Marquis of Salisbury</i> , mod.	H.P.	<i>Moiré</i> , mod.	T.
		<i>Marquise Adèle de Murinais</i> , free	H.P.	<i>Monsieur Alfred Lerois</i>	H.P.
		<i>Marquise de Castellane</i> , mod.	H.P.	<i>Monsieur Boncenne</i> , free or mod.	H.P.
				<i>Monsieur E.Y. Teas</i> , mod. or dwf.	H.P.
				<i>Monsieur Fillion</i> , mod.	H.P.
		<i>Marquise de Lignères</i> , m. d.	H.P.	<i>Monsieur Fortado</i> , free or mod.	T.
		<i>Marquise de Mortemart</i> , mod. or dwf.	H.P.		
<i>Maréchal Robert</i> , free	T.			<i>Monsieur Jard</i> , free	B.

[illegible]

TREES AND SHRUBS.

NOTES ON TREES AND SHRUBS.

Æsculus parviflora.—Though one of the handsomest of all hardy shrubs, and one, too, which is in full beauty when few others are in bloom, this North American Chestnut is comparatively seldom seen in this country. It is, however, perfectly hardy, and only requires to be seen to secure a fuller recognition of its merits. As a rule, it rarely attains the height mentioned by London, viz., 10 feet to 15 feet, and is perhaps best treated as a dwarf subject, a number of the stems being cut away every year. A constant succession of strong shoots is thus secured, and these bear much finer flowers than those produced by older branches. London sums up the good qualities of this species as follows: "The shoots are slender, spreading, and rooting at the joints where they happen to rest on the soil, with ascending extremities. The tree comes into flower about a month or six weeks later than the other *Æsculaceæ* and continues flowering, in the case of large plants on moist soil, for three months or longer, forming one of the greatest floral ornaments of the shrubbery at a season when very few trees or shrubs are in flower. The fruit, which is small, seldom ripens in England, but in America it is said to be eaten boiled or roasted; and M. Poiteau, accordingly, has included this species of *Pavia* in his list of fruit trees." It has red leaf-stalks, glossy dark green leaves, and long panicle racemes of white flowers; the long white filaments of which, surmounted by the red anthers, impart to them a fine fringed appearance. In various books, &c., this is found under the names of *Pavia macrostachya*, *Æsculus macrostachya*, *Pavia edulis*, &c. It delights in a moist situation or near water, and thrives well in a strong clay soil.

Syringa Emodi.—This Himalayan Lilac is additionally valuable owing to its flowering late in the season. It forms a large stout-growing bush or small tree, the flowers of which are white or sometimes tinged with lilac, and borne in erect panicles. A plant studded with these spikes of blossoms is very ornamental. They are also strongly scented—indeed, too much so for close acquaintance, but at a distance the odour is not unpleasant. It thrives as well as the common kind in ordinary garden soil, and is quite hardy.

Elæagnus rotundifolia.—This is a most interesting species. We have a plant of it here from 4 feet to 5 feet in height, which is annually covered with pretty scarlet and amber-coloured berries. It is perfectly hardy, having stood out in a western aspect without any protection since the autumn of 1872. The undersides of the leaves are silvery, which is more distinct on young foliage than on that which is older. The berries, which hang on long stalks like Cherries, are produced on the last year's wood; it has never produced berries here before, probably from the fact of its not being sufficiently established. It seems to be easily propagated by means of layering, and is a shrub which should certainly be in every garden.

Double flowering Cherry (*Cerasus serrulata*).—This Cherry forms a very ornamental deciduous somewhat erect tree-like shrub from 6 feet to 8 feet high, with stout branches sparsely furnished with laterals, which in April are thickly clothed with numerous clusters of large double flowers, that remain long in perfection; on account of this and its dwarf tree-like appearance, it is the most desirable of all the double-flowered Cherries for a small garden. It is a native of the north of China, where it is called "Young-To." It grows freely in any good garden soil, and is increased either by budding or grafting on the common Cherry stock. It was first introduced into this country in 1822. The leaves are obovate-pointed, quite smooth, bristly serrated on the edges, alternate on the young shoots, but more or less crowded together on the other parts, and very like those of the *Bigarreau* Cherry both in size and shape. The flowers are double, white at first, but afterwards, when fully expanded, tinged with red and produced in clusters on the previous year's growth.

Spiræa bella.—This beautiful species forms an open and rather loose-growing shrub, from 3 feet to 4 feet high, which throws up strong shoots annually from the ground, that, in the following season, produce laterals, terminated with loose corymbs of pretty deep rose-coloured flowers in May and June. The leaves are alternate, on longish footstalks, ovate, acutely pointed, sharply serrated, light green, and smooth on the upper surface, somewhat glaucous beneath, with the peduncles and principal veins on the under side pubescent. The stems are somewhat diffuse, flexuose, reddish, and branching; branches, loose, slender, spreading, and downy. The fruit is ripe in September. It is a native of Nepaul and Bhotan, where it is found in ravines and mountain woods at an elevation of from 5000 feet to 9000 feet. It is perfectly hardy, grows freely in any common garden soil, and is easily increased either by cuttings or by means of suckers, which, if separated in the autumn, soon make nice plants. It was introduced in 1820.

The Nepaul Beam tree.—The subject of adapting the size of tree to the extent of the grounds in which they are to be planted is one which is very generally neglected, notwithstanding its great importance; for almost everyone who plants a garden of a few rods in the neighbourhood of towns finds in eight or ten years afterwards that a few of the coarser-growing trees have attained to such a size as to smother everything else, and to render it altogether impossible either to have smooth turf or healthy flowers. Now the *Pyrus vestita* is one of those small trees which are most suitable for planting in such places, not only on account of the beauty of its foliage, but also on account of its growing rapidly till it attains a height of from 15 feet to 20 feet, and becomes comparatively stationary for some years, forming a splendid small tree from 20 feet to 30 feet in height, which flowers in May and June. It is a native of Kumaon and Upper Nepaul at elevations of from 9000 feet to 12,000 feet, and was introduced in 1820. The leaves are very large, ovate-acute or elliptic, acutely crenated or coarsely serrated towards the points on rather long footstalks; and when they first appear, which is very late in the season, they are clothed with a thick white coating of wool, but as soon as the warm weather advances, they throw off their fleecy coat on the upper surface, and at length become smooth and of a glossy green. In the autumn, before they drop off, they assume a fine pale yellow colour. The branches are whitely tomentose when young, but smooth when old. The flowers, which are numerous and white, are borne in branched, terminal, woolly, racemose corymbs. The fruit is round, tubercled, glossy, and about the size of a common marble, and greenish brown when ripe in October. The following are the synonyms under which it is often sold: *Pyrus crenata*, *lanata*, and *nepalensis*.

Berberis concinna is a charming little Himalayan Barberry, with small neat foliage, light green above and silvery white beneath. The pale yellow flowers appear in July and August, when scarcely any other species is to be found in bloom. It is a distinct and handsome dwarf-growing Evergreen, and is most at home in the rockery or in the front of the shrubbery border.

Indigofera Gérardiana is a Himalayan species with neat light green foliage and a profusion of racemes of rosy pink flowers. It forms a compact, dwarf bush in the open shrubbery, but is also well adapted for covering walls, where it makes longer growths and flowers very freely. In some gardens this pretty shrub is found under the names of *I. floribunda*, *I. coronillæfolia*, and *I. Dosua*; the first and the last of these names, however, belong rightly to different species.

The Scarlet Oak—Most planters who grow this fine American Oak are thoroughly aware of the beauty of its large leaves during summer, and the brilliant autumnal colour they assume before being shed. It grows, too, in almost any soil, and soon forms a distinct and handsome tree. The

beautiful tints of the second growth are also a recommendation; in the arboretum at Kew, and in other places, trees of this species are now very conspicuous, the bronzy red of the young shoots and leaves forming a striking contrast to the older foliage. Q.

OBITUARY.

THE death is announced of Mr. J. H. MANGLES, of Valewood, Haslemere, who for the past few years has been prominent in the horticultural world as an ardent collector and cultivator of the species of *Rhododendron*. Indeed, he had been latterly identified as an authority with respect to this difficult genus. His studies of the genus were not confined to the herbarium, as is the case with many botanists who devote their time to a special genus or class, but he studied the plants minutely under cultivation; hence his knowledge of *Rhododendrons* was thoroughly practical as well as scientific. One of his chief aims was that of endeavouring to ascertain, if possible, the limits of so-called species by means of hybridisation. His many successes and still more numerous failures in this direction formed a large component of his *Rhododendron* education. One of his most successful crosses was the lovely hybrid between *R. Aucklandi* and *R. ponticum*; he thus managed to hybridise an Asiatic and a European species, but he was unsuccessful in all his attempts in intercrossing the Javanese race with other species. His hybridising work was not, however, confined to *Rhododendrons*; he experimented upon other plants, and the beautiful *Lilium Manglesi* is the result of his work upon Lily crossing.

During the last few years Mr. Mangles was a member of the council of the Royal Horticultural Society, and during his tenure of office was chiefly instrumental, in conjunction with Dr. Michael Foster, in promoting and organising the highly successful evening gatherings of Fellows of the Society held at the Linnean Society's rooms at Burlington House. It was, moreover, mainly due to his exertions that the large exhibition of Narcissi and conference of Narcissi cultivators were held at South Kensington last April. The Royal Horticultural Society has therefore lost a most active councilman, and horticulture, particularly the botanical branch of it, has been deprived of an industrious worker. Mr. Mangles died on August 24 in the 52nd year of his age.

ROSES IN THE WEST OF ENGLAND.

It is worthy of note that at some of the leading horticultural shows held in the west of England during the past two weeks Roses have not only been numerous, but very finely shown for the season, as in all parts cultivators have complained of the drought. At the Trowbridge Horticultural Society's Show at the end of August there was a class for twenty-four varieties, in which Messrs. George Cooling & Sons, nurserymen, Bath, were placed first with some large, fresh, and clean blooms of the following fine varieties: *Clemence Joigneaux*, *Felicien David*, *Red Gauntlet*, apparently a good useful dark red Rose; *Comtesse de Serenye*, very charming; *Marie Baumann*, finely coloured; *Captain Christy*, *Marquise de Castellane*, *Duke of Connaught*, *La France*, *Comtesse d'Oxford*, *Charles Darwin*, *Gloire de Dijon*, *Earl of Pembroke*, a good-looking red Rose; and *Dupuy Jamain*. Mr. J. Mattock, nurseryman, Headington, one of the Oxford growers who always shows Roses so finely late in the season, was second with very good flowers of the following: *Pitord*, with a singular purple glow; *Baroness Rothschild*, *Star of Waltham*, a very fine Rose indeed; *Xavier Olibo*, and *Baron Gonella*. Other fine varieties shown on this occasion were *Mlle. Eugénie Verdier*, *Louis Van Houtte*, very rich in colour; *A. K. Williams*, *Duke of Teck*, the useful old General Jacquemint, and the following charming *Teas*: *Marie Van Houtte*, *Innocente Pirola*, *Catherine Mermet*, and *Anna Olivier*. At Calne Show there was an excellent competition for a handsome cup, and on this occasion Mr. J. Mattock was the

fortunate winner, staging a really high-class 36 flowers for the time of year, the following being remarkably good: A. K. Williams, Souvenir de Madame Berthier, a fine full pale rose-coloured flower; Paul Néron, Duchess of Bedford, Harrison Weir, Mlle. Eugénie Verdier, Jean Pernet, Catherine Mermet, Maréchal Niel, Chas. Lefebvre, Anna Olivier, Perle des Jardins, Madame Camille, and Marie Van Houtte. The Noisettes and Teas were a great feature on this stand. Messrs. J. Jefferies and Son, nurserymen, Cirencester, were placed second, with some remarkably good blooms that were unfortunately a little damaged at the backs. Their leading flowers were Madame Victor Verdier, Louis Van Houtte, Alfred Colomb, Mrs. C. Wood, Annie Wood, Ferdinand de Lesseps, Marie Rady, Comtesse d'Oxford, Mad. Hippolyte Jamain, Paul Jamain, A. K. Williams, Duchess of Bedford, Mrs. Jowitt, Marquise de Castellane, Senateur Vaisse, Marie Baumann, Harrison Weir, and Belle Lyonnaise. The following varieties were well shown: Arthur Dickson, Capt. Christy, Souvenir de Paul Néron, Duke of Wellington, and François Michelin.

At Chippenham Show on the following day Messrs. Jefferies & Sons and Mattock again met to fight out a battle with thirty-six Roses, and here the former triumphed, staging a remarkably good lot indeed, conspicuous among the flowers being Madame Victor Verdier, Alfred Colomb, Duchess of Bedford, François Michelin, Senateur Vaisse, Mrs. Jowitt, Mlle. Gabrielle Luizet, Annie Wood, Dr. Andry, Mad. Hippolyte Jamain, Mons. E. Y. Teas, Marie Baumann, Duke of Teck, A. K. Williams, Mrs. Charles Wood, Rosieriste Jacobs, Charles Darwin, Paul Jamain, and Madame Charles Crapelet. Mr. Mattock was well up with a good lot of flowers, comprising Marie Baumann, Maréchal Niel, Devienne Lamy, A. K. Williams, Louis Van Houtte, Marie Van Houtte, Anna Olivier, Madame Lambard, Duke of Connaught, Cornelia Koch, a beautiful creamy white Tea of the Gloire de Dijon type; Rubens, Mrs. Laxton, Souvenir de Mme. Berthier, very fine and appearing to be an excellent autumnal Rose; François Michelin, and David Pradel, a Tea Rose that lasts for a long time in a cut state.

It was pleasing to note that in all the Rose classes there was an excellent competition among the growers in or near the district, and the old popular and undying love of the Rose was manifested by the crowds of visitors which gathered about the boxes of flowers and clamoured for a bunch of bloom at clearing-away time. Many horticultural societies make a speciality of cut Roses, and it appears to be one of the most powerful attractions in a floral sense. The truly wonderful Roses shown by cottagers at these west of England shows is a remarkable fact, and in many cottage gardens about Calne and Chippenham can be seen fine standard Rose trees, from which they appear to cut the blooms they show so well.

R. D.

5235.—**Anemone beds.**—In response to "A. P.'s" enquiry as to some fitting subject to cover a permanent bed of Anemones when the plants are at rest, I fear I shall be thought to be joking if I say that the best material is found in a top-dressing of short manure. That is what I employ, as I prefer thus to stimulate the Anemones so as to secure a grand bloom from them in the spring rather than to endanger them by sowing or planting something else on the bed in the summer. Really the Anemones rest here but some two months, as my plants died off about the middle of June and are already again fast throwing up leaf. If such quick-growing annuals as Nemophila or Virginian Stock were sown over the surface of the beds as soon as the leafage had died down, they could hardly be blooming ere the autumn growth would again need air and light. The only other remedy for the unsightliness found in bare beds in the summer seems to be found in planting the Anemones much wider apart and sowing seeds of some dwarf annual in the spaces before the Anemone foliage had died away.—D.

QUESTIONS.

5242.—**Select Tea Roses.**—Will some reader kindly furnish me with the names of three of the best Tea Roses for supplying cut blooms early in the season? It is intended to plant them in an inside border, and train them to a trellis under the roof of a lean-to house with a south-east aspect.—T.

5243.—**Perfume of Nicotiana affinis.**—The flowers of this plant open several days in succession. They generally open about five or six in the afternoon. Can anyone tell me why for two hours or so they have no scent at all, while later in the evening it is so strong you cannot pass them unnoticed? It cannot be only the damp, as on damp afternoons they do not smell more nor on dry evenings less—rather the contrary, as far as I have noticed. Many of my plants are self-sown in the borders. It is a pity it looks so badly when the flowers are closed, but when out it is lovely. The flowers, still open at half-past ten this morning, it being cool and damp, have absolutely no scent.—J. R. D.

5244.—**Grapes shanking.**—I am instructed by my employer to ask for information from any of your correspondents respecting a viney we have here, the Grapes in which shank badly year after year. When I describe the conditions under which the Grapes are growing, you may, like myself, have no difficulty in giving the reason of the shanking. The viney is a span-roof, with darkened glass. The wires on which the rods are trained are only 9 inches from the glass. The leaves are always pressed up against the glass. The house is filled with Azaleas for about eight months in the year. The consequence is, shrips do damage every year, notwithstanding every precaution being taken to keep them down. The house is ventilated at one side only on the roof and one side only at the bottom. The border is all inside. The house is, all but a few rods, filled with Muscat of Alexandria. The latter shank badly; the others not so bad.—T. S. M.

5245.—**Old garden renovation.**—I should be greatly obliged if some of your correspondents would give me a little advice in respect to some matters concerning a garden about nineteen years old which is about to become my property. The garden in question is surrounded by hedges, about an acre in extent, along the road frontage, and returning along the west side is a shrubbery. Trees are planted next the hedges, and include Limes, Poplars, Hawthorns, Laburnums, &c.; then come shrubs, such as Aucubas, Laurels, Hollies, Lilacs, &c., and in front of these is a border where an attempt has been made to grow Geraniums, Calceolarias, &c. The trees quite overshadow the whole of the shrubs and border. I understand the garden has been much neglected, and so I should judge by these shrubberies; the soil looks poor and the shrubs old, dirty, and shabby, especially under the Limes where the leaves are covered by a black deposit. Can I move these old shrubs, or will it kill them? The removal of some is necessary, as they are in many places overcrowded, and in other places gaps. I might cut back some of the most overshadowing branches of the trees. To renovate the soil I propose to remove some of the old soil round the shrubs and well manure with cow manure, then generally over the surface spread road scrapings with dead leaves and cow manure (unless some artificial manure is better?), previously breaking up the soil to as great a depth as possible without injury to the roots of the trees and shrubs; then I intend cutting back all the very old shrubs to try and induce young growth. I should like to know whether this will be doing the best for the shrubs and how much manure I should give. Are there any flowers which would succeed under such trees? Would a bed on a lawn planted permanently with a few Evergreens, herbaceous Perennials, Dahlias (single and double), clumps of Narcissus poeticus and Alstromerias, letting the ground be carpeted by a low-growing perennial, give a pleasing result? What carpeting plant will grow quickly, and how can it be best raised? Would dwarf Phlox or some of the taller kinds, Pentstemons, or Pyrethrums be suitable for beds on a lawn? I want to use some of the Cannas and Fuchsias for foliage; will these stand our winters? I should be glad to know some of the best fine-foliaged plants to introduce into beds amongst flowers which will stand the winter's frosts and rains. Are they not expensive to buy? Could they be raised from seed? or is that a long process? There is one piece of Grass very sheltered, but without much sun, I thought of making a bed there in which to grow English, German, and Spanish Irises amongst hardy Ferns, carpeted with Forget-me-nots. There is one border facing due east, but sheltered by a row of espalier fruit trees on the opposite side of the path. Would perennials, such as Phlox, Pentstemons, Potentillas, Antirrhinums, Hollyhocks, Larkspurs, Campanulas, Columines, and Primulas, grow there if the border were dug over and manured? The soil is a gravelly clay. If I obtained seeds of these now and sowed in pans in a little forcing pit, would the seedlings be ready to plant out next May or June? Is it too late to repot Azaleas, which are looking sickly with yellow leaves and little soil in the pots? I hope I have not made these queries too long, but I should be very much obliged for advice.—G. M.

Propagating the Desfontainea.—I know of no more beautiful evergreen shrub than Desfontainea spinosa. It is, however, very seldom seen, partly because it is not quite hardy, and partly because it is supposed to be difficult of increase. For the benefit of those who wish to get the shrub, I may state that about this time last year I received some cuttings. I did not feel very sanguine about them, but I put them in the open ground under a

bell-glass, and left them there all the winter. To my surprise, they all rooted readily, and, to my greater surprise, they all flowered when less than 3 inches high. I can scarcely fancy a more attractive plant than a potful of these young plants all in flower in the early spring struck from autumn cuttings.—HENRY N. ELLACOMBE, *Bitton Vicarage.*

LATE NOTES.

Royal Botanic Society (W. T. B. B.)—Probably the secretary at the Royal Botanic Society's Gardens at Regent's Park will furnish you with the report to which you refer.

Oak gall (Anon).—The curious growth on the Oak are galls (Artichoke galls), formed by grubs hatched from eggs deposited in leaf-buds by a gall fly (*Andricus pilosus*).—G. S. S.

5226.—**Chrysanthemum manures.**—Two and a half ounces to half a pint of water should be used when the plants are showing buds, but at no other time, and then only twice a week. Previous to the plants showing buds they should be watered with scot water.—BELFAST.

5234.—**Woodlice** are very troublesome in Orchid houses. Wrap boiled Potatoes in short dry hay and place them in small pots. Lay the latter on their sides at night; the woodlice will collect in them and may be shaken out and destroyed in the morning.—J. DOUGLAS.

Hedychium Gardnerianum.—One day last week I saw this plant in its fine condition in Lady Stamford's garden at Enville. Its Reed-like stems had attained a height of 6 feet or more, and it was bearing several beautiful spikes of its singular yellow blooms, which filled the house with a strong and pleasing odour.—CAMBRIAN.

Ribes speciosum.—"Alpha" says, "this is of slower growth and more particular as to soil than R. aureum and R. sanguineum." Here it is the most vigorous. One planted two years ago has this summer thrown up from the ground seven shoots from 5 feet to 7 feet high, and one is still lengthening, although only growing in an ordinary border near a wall. This is certainly not slow growth.—J. M., *Charmouth, Dorset.*

Aspidium leaves diseased (M. S. Ashcraft).—The brown-spotted appearance on the leaves is due to the presence of a fungus named *Cladosporium herbarum*. It is common on injured and decaying leaves, and is not capable of causing disease. The leaf sent appears to have been seriously scalded or injured, perhaps by the sun after watering. The brown spots only occur on the damaged parts.—W. G. S.

Nectarine on a Peach tree.—I have in my garden an extraordinary freak of Nature, which may interest your readers. About twelve years since I grafted a Barrington Peach on a Plum sucker. Until this year the tree has borne nothing but Peaches, but now I have one Nectarine among the Peaches. The fruit is not yet ripe, but insects have attacked it, and possibly it may not mature, although a perfectly healthy fruit now.—A. W. LEMAITRE, *Copthall, Tuckersham.*

Polygala Dalmatiana.—This is one of the most free flowering and easily grown of hard-wooded greenhouse plants. It flowers freely in quite small pots, but is very effective when grown on into an 8-inch pot. Good peat, with a liberal allowance of silver sand, suits it best, and it should be pruned back rather close after flowering. Plenty of air in summer, with full exposure in autumn, is absolutely essential.—J. C. B.

Aristolochia ornithocephala.—Alluding to this stove climbing plant, Lady Theodore Guest, writing from Motcombe House, Shaftesbury, says: "It may interest you to know that the Aristolochia which commenced flowering in Easter week, i.e., April 15, has been in full flower ever since (fifty and more blossoms at a time) till now, when it has nearly done; one flower, though, is still on it. It has been immensely admired, and is certainly very decorative in a hothouse, though the perfume is not sweet."

Names of fruits.—R. F. P.—The Grape you send is doubtless Alnwick Seedling, with only one or two properly fertilised berries on the bunch. The non-setting of this Grape is a prevalent fault, and has been frequently noticed in THE GARDEN.—T. H. (Froggell).—Duchess of Oldenburgh.—Brazil.—1, Humboldt; 2, cannot identify; 3, Elruge; 4, Royal George.—Anon.—1 and 2, both Grosse Mignonne.—T. Custance.—1, Jargonelle; 2, Duchess of Oldenburgh.

Names of plants.—T. F.—We cannot name the Rose you send.—M. T. W.—An uncommon variety of the British Ivy, but we cannot name it from merely a leaf.—R. T.—1, Erica cinerea; 2, dark variety of No. 1.—T. A. A. H.—We cannot name the shrub you sent without seeing flowers.—J. B. D.—Zygopetalum maxillare.—G. S. S.—Desfontainea spinosa (Holly-like); Phlox fruticosa.—H. D. E.—Cattleya Forbesi.—M. Dowson.—1, Maranta zebra; 2, M. Lindenii; 3, M. fasciata; 4, M. albo-lineata.—J. H. Valence.—The Orchid is Cypripedium barbatum; the Fern is probably Cyathea princeps.—G. H. Mounsdon.—The scrap of flower you send is a white Asclepias, of which we should like to have another specimen; if you send foliage as well as flowers, we may be able to ascertain its name.—L. P. Fleet.—1, Tradescantia zebrina tricolor; 2, T. reptans variegata; 3, probably a Habrothamnus; 4, Justicia speciosa.—G. I.—Antennaria dioica.

No. 669. SATURDAY, Sept. 13, 1894. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE." *Shakespeare.*

HORTICULTURAL PROGRESS.

THERE is much force in what Mr. Cornhill writes about the work of the Pomological Society of France, which appears to be an organised body, working in a certain direction and in a methodical manner. The great fault of our own Royal and other horticultural societies is that they have never been held together by any common bond or organisation. This is particularly true of the Royal Horticultural Society, whose work has been of the most aimless description. It never had any comprehensive plan, nor ever carried out any important task in a thorough manner. It has proposed great schemes now and again, but they have generally gone "a gley." Material in abundance it has had at its disposal, and opportunities, too, but all have been squandered to little purpose. Take the subject of fruit culture in this country, for example, and fruit nomenclature. What a field for the worker or any body of workers! All that we are sure about is that the greatest ignorance and difference of opinion exist on nearly all important points of culture entailing enormous annual loss, which all our shows and showing and horticultural societies have not perceptibly alleviated in any way. When one thinks on the amount of influence, energy, and money that have been spent in times past on the miserable fads of florists, the culture of specimen plants and numerous other frivolous and useless objects connected with exhibitions, and then on the much more important objects that have been neglected or missed altogether, it is enough to make anyone sad. It is not money that is wanted to organise some such body as that proposed by Mr. Cornhill to investigate the subject of fruit culture throughout the country so much as purpose and a plan. A whole host of enthusiasts can be enlisted to rush off on a Toadstool-hunting expedition whenever they are wanted, and the columns of the papers are always open to them to record, not only their discoveries, but every frivolous circumstance in connection therewith. Could not some similar body be organised to make an annual foray into the counties in the same way to report on the fruit crops and matters relating thereto, and so year by year do something to advance the cause of fruit culture at home? That would be a task worth attempting, and if followed out in a systematic manner could not but yield great and useful results. This, however, is only a suggestion. The Royal Horticultural Society, Chiswick, the scientific, floral, and fruit committees are bodies which are commonly regarded as having been all rolled into one and sharing each other's responsibilities, and they will no doubt please themselves in future, but hitherto their work has not been worthy of them, and the sooner they turn over a new leaf the better.

NORTHERNER.

THE APPLE CONGRESS REPORT.

AT last the official report of the Apple Congress is to be published. This much we learn from advertisements. It has been compiled by Mr. Barron and will be edited by the Rev. G. Henslow.

It will be in book form, octavo size, and contain about 200 pages, embracing:—

1. A general report on the whole of the exhibits—arranged in ten separate groups or divisions, according to district—including the observations of the committee, with cultural and other details by the several exhibitors, &c.
2. Tabulated lists of selected varieties of Apples for each separate district, &c.
3. A descriptive catalogue with classification of the whole of the varieties exhibited, numbering over 2000.

As to time and place of publication and the price of the volume, we are hitherto in ignorance, but it is pleasant to know that the thing has not been shelved entirely. The Apple is, perhaps, of all our hardy fruits, by far the most valuable, and there is ample room for a good and practical treatise on its cultivation and variation on different soils, and in the varying climates of the British Isles. Let us hope that the important question of stocks on which to engraft the Apple may not be overlooked, especially as a trial of such stocks was made at Chiswick some years ago. The Apple is so important a "food product," that it is a question whether the Government should not award some assistance to publications of this kind.

Pomponé Dahlias.—The dealers in florists' flowers, having made their market of the single Dahlias, are now endeavouring to popularise the pompones. I am told they will drive the singles before them in a few years, but that is very unlikely. The pomponé Dahlia is good as a variety, but it is neither more nor less than a miniature double Dahlia of the old type with all its faults. I prefer the semi-doubles to the pompones, but for form and symmetry neither approach the single varieties, although these differ widely, too. We have an endless variety here of named sorts and seedlings, but it seems as if all the single varieties might be divided into two sections, viz., reflexed and incurved, to use the florist's terms. The reflexed forms are generally most perfect, and are decidedly the most conspicuous and showy, and may easily be singled out a long way off in a group. The fault of Ware's White Queen is that it has rather saucer-shaped flowers that droop slightly, and do not show themselves. A white variety with reflexed flowers of an erect habit would be a great improvement.—J. S. W.

Shading glass houses.—We hear a good deal of scientific talk about heliotropism and the rays of the solar spectrum now-a-days, but I am not aware that anyone has yet told us the best colours to use in shading or "muffling," as some call it, our plant houses. I see various colours used in various places, such as green, white, sky blue, and red, or amber colour, but what I want to know is the best tint to employ. No doubt clear glass and some contrivance for a light movable canvas shading is best where constant attention can be given, but this is not always convenient, and so long as some slight permanent shade is necessary, it is as well to use it of that colour or tint best suited to vegetable growth. Hitherto we find the best permanent shading to be coarse hempen canvas; "Hessian," or "paperhanger's canvas" I think it is called. This stretched at a few inches above the glass tempers the heat rays, and yet does not cause growth to etiolate or become "drawn" below.—F. W. B.

Herbaceous plant culture.—On the face of it, what "J. C. C." says about herbaceous plants exhausting the soil in which they grow, as vegetables do, appears indisputable, but after the experiments at Rothamstead one feels it is best not to be too dogmatic on such matters. There is nothing more surprising than the length of time herbaceous perennials will grow and thrive without manure. Our borders are so extensive here, that manuring them regularly is out of the question, and some have never been manured since they were planted years ago, yet we cannot say there is any deterioration in the plants. Bulbs, like Daf-

fodils and Tulips, &c., are particularly enduring. I have noticed annually a small patch of Daffodils that has grown and flowered on a poor piece of lawn for nearly twenty years without any assistance. Manure flower borders by all means, but, provided the soil is well dug and enriched at the beginning, it is certainly not necessary to incur much expense in that way afterwards. When manure is applied, it should be in the form of a good mulching put on in November. The nature of the soil of course makes much difference. Poor sandy soils cannot long sustain any crop without manure, but good loams will. Where the plants are not too crowded, the roots draw their chief supplies from the neighbouring unoccupied soil at their extremities, and seem to find sufficient food to supply their wants. The rain which falls undoubtedly supplies a considerable portion of the food of plants; if it were not so, what would become of our lawns? We could, too, point to plenty of lawns from which the Grass has been removed by the machine for thirty years, during which period no manure of any kind has been applied, and still they are in fresh and fair condition. What does the Grass live upon in such a case, seeing that the roots do not penetrate more than 2 inches to 3 inches deep, if not upon the food supplied in the rain which falls? In the soil around here the common Daisy abounds, and is the pest of lawns in every garden where it has grown and seeded without the least deterioration for a quarter of a century without any manure, and the same may be said of other weeds.—J. S. W.

PLANTS IN FLOWER.

Crassula pallida.—This is a white-flowered species not unlike *C. (Roehea) falcata*, with a delicious Hawthorn-like scent. The leaves are thick, fleshy, boat-shaped, and almost white. The head of flowers is quite as large as is that of *C. falcata*, and, being pure white, it is a nice companion plant to the last mentioned. When in bud the little star-shaped flowers have the anthers protruding through their tops, and the valves or little cases in which the pollen is enclosed are deep red in colour. When the flowers open, however, these valves open also, and the red outside is hidden by their folding back, so as to disclose the little balls of yellow pollen.

Costus igneus.—We heard of this plant through the *Illustration Horticole*, where it was recently figured by M. Linden, and a few days ago we saw a plant of it in flower in the T range at Kew. In habit it is not unlike *C. spiralis*, which we noted a few weeks back, but the stems are shorter and thicker than in that species. The flowers are borne at the top of the shoots, springing from a cone-like arrangement, and opening two or three together; they are $1\frac{1}{2}$ inches wide, almost flat, and of a bright orange-red colour. Judging from what we learned of the Kew specimen, this species is likely to prove a freer flowerer than are most of the Costuses. It is a stove plant, and has been introduced from Bahia.

Disa grandiflora superba.—This lovely Cape Orchid is now in bloom in Mr. George's garden, Purdysburn, Belfast. One plant in a 20-inch pan carries no fewer than ninety-five spikes, three, four, and five flowers being on most of the spikes; it is, indeed, a grand specimen of this brilliant Orchid. Three other plants in 10-inch pots have from fifteen to twenty spikes on a plant, averaging four flowers on a spike. These plants, I need hardly say, are worthy of a visit, forming, as they do, one of the charming attractions of this interesting old garden. Mr. Young, the gardener, says that he has, on a former occasion, had as many as nine flowers on a spike; whether that number has been exceeded, perhaps some reader of THE GARDEN will through it perhaps say.—H.

Euphorbia punicea.—What are called the flowers in the popular garden Euphorbias, such as *E. splendens* and *E. jacquiniæflora*, and the closely related Poinsettias, are really only floral appendages, or, in other words, the involucre bracts which precede the true flowers. To the uninitiated

an examination of the flowers of the above plants will reveal an interesting character of the Spurge-worts, the true flowers of every one of which are insignificant, and it is only when the involucre is large and brightly coloured that the Euphorbias find favour as garden plants. *E. punicea* is a strong-growing, fleshy-stemmed kind, with leaves like some of the *Sempervivums*. The bracts of this species are large and leaf-like, and form a whorl all round the little bunch of small yellow flowers, which are produced in the tops of the strongest shoots. These bracts are bright scarlet in colour. A plant of the above is now in flower in the succulent house at Kew.

***Ixora macrothyrsa*.**—We find that the magnificent *Ixora* now flowering in the Victoria house at Kew, and noted in THE GARDEN last week under the name of *I. Duffii*, is referred to the plant of the above name, of which specimens are contained in the Kew herbarium. The name *Duffii* appears to have been given to this plant by its introducers, the Messrs. Veitch, who imported and distributed it several years ago under that name. How so fine a plant has failed to find its way to popular favour (we do not remember to have seen it elsewhere than at Kew) anyone who has seen it as it is now at Kew would be puzzled to explain. The strong woody habit and tendency of the branches to grow inordinately long before flowering may have been obstacles to the proper testing of the species, for we can easily imagine a cultivator that loved to have *Ixoras* bushy and symmetrical pinching and pruning the shoots of this *Ixora*, and so sacrificing the enormous heads of flower which are apparently only developed on strong woody growths. Treated liberally, and when two or three shoots are obtained on each plant allowed to grow on without further pinching, *I. macrothyrsa* will yield in the autumn its large bunches of handsome flowers at the end of the shoots; and such flowers they are, too large as the largest Cauliflower and as lovely to look upon as the latter is excellent to eat. We recommend *I. macrothyrsa* as a first-rate exhibition plant.

WORK DONE IN WEEK ENDING SEPTEMBER 10.

SEPTEMBER 4.—At last there has been sufficient rain to thoroughly soak the ground—1.06 inches since 9 a.m. yesterday morning. It has been salvation to the winter greens, the last batch of which, Leamington and Late Queen Broccoli, was planted to-day, and the remainder of the earlier plantings earthed up. Celery, too, has been earthed up, prior to doing which all the small leaves were pulled off, then each plant was tied up closely with matting to prevent soil getting between the leaves, a plan that enables earthing to be done far more rapidly than by the more common method of holding the leaves together with one hand whilst the soil is pushed in by the other; the matting is cut as soon as earthing is done, otherwise the central stems would grow deformed. Weeding between rows of Peas and Carrots, and sowing Mustard and Cress and rolling the walks filled up the day's work as regards the kitchen garden. In the flower department Brompton Stocks were planted in clumps of three and five in the more open parts of herbaceous borders, and a batch to supply cut flowers on a south border in the kitchen garden. A few Canterbury Bells and Wallflowers were also planted out and the remainder of the seedlings pricked out, the bulk of them to stand thus thickly—about 6 inches apart—till spring, and others to be planted out in mixed borders as soon as time and space for doing them can be found.

SEPTEMBER 5.—The damp is telling adversely on ripe Grapes; some over-ripe Hamburgs we find it necessary to look over daily, as one berry soon taints a half-dozen. Where there are good Grape rooms such fruit would be best cut, and we intend to set about preparing the room for them. Full daylight is being given to Muscats by drawing aside the foliage, the shading of whiting that was applied two or three weeks ago having been washed off, and all the Pine pit-lights have had a thorough washing outside and in, as from this time forth all

light that can be had is just so much the more favourable to stocky growth. All the plants were watered to-day, the fruiterers being given manure water—cow manure. Potting of succession stock will be done next week, and therefore these were extra well soaked, as it is necessary that the balls should be well moistened through before being put into larger pots. Water at a temperature of 80°; in fact this is the minimum point that we like to apply it. Propagation of bedding plants is still the general work connected with the houses; all soft-wooded plants have now been got in. Pelargoniums are now being finished, these last batches being put directly in boxes in which they are intended to winter, and are for the present stood in the full sunshine. Being showery, all outdoor hands were kept mowing round trees and shrubs that could not be done by the machine mower.

SEPTEMBER 6.—The mowing done yesterday has all been cleared up, and edgings and verges in flower garden mown and clipped and the beds picked over. The rain has made the flowers look very wretched, and now the great merit of foliage bedding comes to the front; for these arrangements both as to dwarf carpeting plants and large sub-tropicals are bright; nay, I think brighter than before the rain. Some of the tall growers have had a tie to their stakes, and a few of the inner leaves, through overcrowding having turned yellow, have been cut off. The flowers have been picked off succulents, and the side shoots of *Echeverias* and *Sempervivums* pulled off for increase of stock. Single Dahlias have been cleared of seed-pods; they are now in great beauty. The rain has had marvellous effects; increased size and abundance of flowers from what they were a fortnight ago is something remarkable. Our best varieties are Canary (yellow), White Queen, Paragon (striped maroon), *Gracilis perfecta* (scarlet), and Harold (pink). Juarez, the scarlet Cactus, and Constance, which is called white Cactus, but has nothing in common with the scarlet kind, are two excellent companion varieties to the single kinds. The newly introduced old kind, *Formosissima picta* (scarlet with yellow stripe down centre of petal) is a great disappointment, as not one per cent. of the flowers comes truly striped. The general clearing up in and about the houses to-day included the renewal of gravel for the floors that are not paved, also the washing of flooring trellis, doors, and ends of houses; cobwebs about glass and woodwork, and weeds on inside borders are rarely tolerated for more than a few days together. Saturday usually sees the end of them and to-day they got an extra attention.

SEPTEMBER 8.—The cyclone of yesterday has made to-day an extra busy one, and yet nothing has been done other than sweeping up sticks and leaves and tying up tall plants that were broken down. Abutilons, Acacias, Dahlias, Hems, Eucalyptus, Castor-oils have all suffered more or less, but the injury will do some good by way of warning to keep us on the alert for other storms with which we may shortly expect to be visited; for preparedness as regards supports to all plants will now form a part of our daily programme of operations.

SEPTEMBER 9.—“A calm after a storm” indeed, this has been just the sort of day one works with greatest pleasure. There has been sufficient sunshine to keep one cheerful, and yet not so hot as to make toil burdensome. Finished cleaning up and rolled walks. Put in cuttings of Pinks, Phloxes, Antirrhinums, and Pentstemons. Handlights placed on a border having an eastern aspect shelter the cuttings, and will be ample protection for the winter also. Layers of Pinks and Carnations have been severed from the parent plants and top-dressed with fresh soil, and as soon as the soil is filled with roots, the plants will be carefully divided and planted in permanent beds or clumps. As a rule it is better to defer planting them out till the severity of winter is passed. Strawberry plants in pots have been weeded and divested of runners. We never allow them to suffer for lack of water, or to stand sufficiently long on one spot for the roots to enter the ground, and to prevent

the latter, the pots when being weeded are lifted up and the roots protruding from the bottom are rubbed off. Generally, Strawberry plants are left standing too thickly together, the necessary consequence of such over-crowding being long foot-stalks to the leaves and sappy, unripened crowns. Strawberries in the open ground have for the second time been gone over, for the purpose of removing runners, and the last batch has been planted. The ground is in a most favourable condition for doing such work, and there is little fear but that this last planted lot will do equally well as those planted five or six weeks ago. There being so little fruit, the wood growth on Pears, both on walls and in the open quarters, has been abnormally large, and, contrary to our usual practice, we are cutting them as late as the present date, though not so short as was done a month ago, and we would have let them alone altogether were it not that the long breastwood shades many of the best fruit buds, which it is necessary should have all the light and sun possible to plump them up; therefore, the growth is being but partially cut away, the final shortening being left till the winter time. Plums on walls have had the same treatment, and the shoots of Peaches and Nectarines have been finally thinned out and laid in to the walls. Peaches have swelled greatly since the rain, and I think cooler weather has helped to increase their size as much as the rain, as the fruit seemed to get (if I may so express it) hide-bound during the very hot weather, no matter how much water was given them, an occurrence that tends to favour shading in such extremely hot weather as that of the present summer. Protection from wasps has still to be done, but we baulk them somewhat by gathering the fruit before it is quite ripe, and it is just as good in flavour, in fact I think better, and keeps far longer in a usable state than if left to become fully ripe on the trees.

SEPTEMBER 10.—Potted Cinerarias and Primulas; we only require them for small vases, and therefore 5-inch and 6-inch pots only are used. Cinerarias are placed in a cold pit having a northern aspect, so that shading is not necessary, as it would be were they in the same pit—one having a south aspect—as Primulas, which do not require shade after they are well established in the soil. There is yet plenty of time to obtain good plants of both to flower from January onwards if the seedlings are now strong, only the plants will require a little more nursing in the matter of warmth and watering than did the early sowings. Cucumbers showing signs of exhaustion have had a good dressing of fresh soil and horse droppings, after which the bed had a soaking with water at a temperature of 80°. Weak shoots and bad leaves were cut away, as also were all deformed fruit, and as soon as tying was completed the whole, vines and glass, had a good washing with the syringe. The beat, top and bottom, will now be increased, and we shall look for full renewed vigour a week or ten days hence. Ridge and frame Cucumbers are almost done for this year, and some of them are being cleared out that the frames may be got ready for winter-flowering Violets, Violas, Pansies, and Calceolarias cuttings. The laterals on Lady Downes and Alicante Vines have again been stopped. The shoots are left at as great a length as there is space for them without unduly shading of fruit and principal spurs. Mildew has attacked some young Vines that were planted in the spring, and in hope of destroying it the stems have been painted with sulphur mixed with water to the thickness of paint. Dry sulphur has also been scattered about the house freely, and the border has had a thorough drenching, appliances that we doubt not will end further mischief by destroying the pest. Sweeping up mown Grass, cutting Grass verges and edgings of walks, and weeding shrubby clumps, and keeping the bedded-out garden in neat trim condition by picking over the plants, both as regards removal of bad flowers and repression of growth to maintain the designs true as when the beds were first planted, has been our principal outside doings to-day. HANTS.

WOODSTOCK GARDENS, CO. KILKENNY.

I HAVE been to see many gardens in Ireland and elsewhere of late years, and in too many cases the establishment had been reduced to a minimum; the flower-beds had been turfed over, and where order, regularity, and perfect cleanliness once prevailed, the head gardener often made some excuse for not taking the visitor further. Therefore it is a pleasure to see a model show garden such as Woodstock is where there has been no falling away, where visitors are always welcome, and where a dozen picnic parties may often be seen at one time. Upwards of a dozen years ago I drove over from New Ross, Co. Wexford, to see the Right Hon. Colonel Tighe's famous place. I well remember seeing the demesne, which contains about 1800 acres, and stretches about three miles along the gracefully winding Nore, dotted here and there with a number of pleasure parties. The worthy gentleman walked about unattended and unobserved, "enjoying bliss by seeing his fellows blessed." Many things have passed since. This admirable type of the country gentleman has passed away, to the inexpressible grief of a numerous and attached tenantry.

The social revolution that has shivered the relations between landlord and tenant in so many cases in Ireland of recent years has blown over Woodstock too, but has left everything as before. The same kindly relations locally; the same massive gates open to all the public; and one of the first things that struck me as our party drove over from Carlow and neared the gardens—the same old garden hands in most cases I remembered years before, that, like the village preacher, "never changed or wished to change their place."

THE HOUSES number nearly a score. Melons here are well grown in frames or hotbeds, and none are more certain in bearing than Munro's Little Heath. But this method cannot be regulated in regard to temperature with the same certainty as a specially heated Melon house or pit, where the vines can be trained against the glass. In this way Mr. Gray, the gardener, had the fine variety Blenheim Orange, which he considers one of the surest setters and finest scarlet-fleshed Melon in cultivation. In addition to this he grows here, too, a seedling he has raised from Little Heath, combining all the good qualities of both those named. The zonal Pelargonium house was a brilliant sight, a regular stock being maintained for succession, so that next Christmas it will be equally gay. The roof, too, was bright with the vigorous, almost perpetual-blooming, *Tacsonia Van Volxemi*, an immense specimen covering a house nearly 100 feet long. Two remarkably good white zonals for pot culture here is found to be Jeanne d'Aro and Fairest of the Fair, to which may be added Snowball, candidissimum pleurum holding the same position amongst double whites. The freest-blooming pink double which I can confirm is Cannell's Lord Mayor; whilst among the single oculated commend me to Mrs. Naish, then Kate Farner, and that other Kate—Greenaway. This and the supplementary Pelargonium houses are always objects of great interest to the ordinary visitors; but where thousands are grown a few hurried references cannot give an accurate idea of the best, which in any case would vary with the time of the year and the period allowed to bloom—later blooming being the result of removing the flower-buds at present. As in most show places, the most brilliant displays are of the

COLEUSES AND BEGONIAS. Though the former seems to have been elbowed aside by the latter within the last half dozen years—I am including the foliage Begonias with the deciduous tuberous kinds—wherever warm, bright, and vivid colours are prized for nearly nine months of the year, Coleus must find a place. It is so here, and the newer varieties of King, Cannell, Teesdale, Bull, &c., have been drawn on. Ernest, Rosenthal, Beauty of Chichester, The Queen, and some others, not forgetting Resplendent, are some of the best that all should have. The collection of stove and greenhouse plants is of the usual description, with more than the usual health and cleanliness, the

latter being interspersed between the conservatory, cool ferneries, and several other houses open to the public. The large conservatory looking out on the flower ground or rather one of the flower gardens, for there are several, is a very handsome structure externally, with the arms of the family on coloured glass at the entrance. The shape is pyramidal and octagonal, nearly 20 feet high, and contains some fine specimen Palms, Tree Ferns, Camellias, with Coleus, Begonias (foliage), Caladiums, Gloxinias, Abutilons, specimen Fuchsias, while among the creepers I give the preference to *Hoya carnososa*. I was greatly puzzled at the door as to what gave the delicious scent that filled the whole structure. It was *Magnolia fuscata*. Before leaving the houses specially devoted to flowers I must not forget to notice a small collection of Orchids, which, with Crotons, Dracenas, &c., receive here but a secondary attention. Dendrobiums, Cattleyas, and Odontoglossums were, however, represented by a few large healthy specimens.

THE FRUIT DEPARTMENT, especially where tolerable success has been realised, is an object of special interest in such a year as we have passed through. Last year in Ireland we had a minimum of sunshine, and this seems synonymous with a minimum of fruit. On this principle there should be profusion next year. However, all were not blanks with Mr. Gray, as he has already noticed in your columns. I am now referring to outdoor and wall fruit unprotected. It has long since been given up expecting Peaches to succeed unprotected here, so a glass wall structure has been erected, open underneath to give perfect ventilation. Nectarines and Apricots are similarly treated. However, the finest crop of Peaches I saw this year or last were grown here at Minella under sashes put on before the flowering in March and removed when the fruit was set. I commend this to your readers' notice. A gardener of twenty years' experience agrees with me that no such flavour is ever obtained under glass as when grown fully exposed thus. Here the finest and largest Peach is Vanguard, Noblesse, Mignonne, and that hardiest and surest of bearers, Royal George, coming next. Pitmaston Orange stands first among Nectarines, with a fairly good crop trained on curvilinear wrought iron, so has to catch the sunshine. The roots of both go inside and out, so as to make certain of feeding material. Where they are wholly inside, and this applies to Vines also, it is often difficult to know when a deluging of water is necessary or not, while if the drainage is imperfect, rotting of the fibrous roots is almost a certainty. The sheet anchor Vine here is the Black Hamburg, with Buckland Sweetwater, Alicante, and Gros Colmar for succession. All carried a fair, though not exhaustive, crop this season. One of the most successful Vines is the very fine flavoured Black Muscat of Alexandria which Mr. Gray finds to succeed best worked as here on Black Hamburg stock. As elsewhere, the stock of Pears is much under the average, there being very few exceptions, Williams' Bon Chrétien, Beurré d'Amanlis, Jargonelle, Swan's Egg, and the welcome Marie Louise being among the number. Of Plums, Denyer's Victoria has been the most certain and heaviest cropper. Mr. Gray had been removing fruit of his for some weeks and a heavy crop remained. Green Gages, Golden Drops, and Impératrice fell a long distance behind. One of the sights here were two rows of promising Apple standards. Among these the sorts Warner's King, Hawthornden, Stirling Castle, the Irish Peach Apple, Lord Suffield, and most of the Pippins bore fair if not heavy crops. As in other localities, the drought was telling on the vegetable department, and water was not in plenty even for drawing, but this has been a standing difficulty over the British Isles for months. The oldest inhabitant cannot remember a drier season. Into the vegetable grounds or out the visitor can go by means of either of four large, ornamental, gilded gates. We left on the southern, and found ourselves in one of the flower gardens. This is terraced, and each is reached by handsome rows of steps on each side, extending the whole length of the garden wall. Bedding out is still maintained, but with a very

desirable blending of the more showy hardy perennials, of which Lady Louisa Tighe is a pronounced patroness. There are four terraced gardens here extremely brilliant. The beds are edged with Box, which is kept tidy and brings out the design forcibly, between the beds being handsome gravel walks of brownish quartz. The brilliant colours of the zonals are sobered down with the contrast from Lobelias (perennial), Japan Anemones, Carnations and Picotees, Salvias, Veronicas, Stocks, Calceolarias, single Dahlias, Begonias, Phloxes, &c. On the eastern side are some very curious designs in succulents and foliage plants, and further on a raised mound with star-shaped beds and walks, a curiosity of the place being walks of blue pieces of flint. Further on we came to a cool Camellia house, off which was a fernery. In this last Todeas and Killarney Ferns seem to enjoy a sort of wild life without any box or case. This and the adjoining rock cavern and fountains are partly subterranean. It would be better to admit at once that no hurried description could possibly convey an accurate impression of this fine old place. Some of the peculiarities of the place are not yet even referred to. The Red House, nearly three miles' drive from the entrance, the general rendezvous of the picnic parties. The Rock Road, apparently a quarter of a mile long, and flanked on either side with huge quartz boulders, between the interstices of which some curious and half-hardy plants enjoy a happy existence. Here is a fine specimen of Fortune's Chusan Palm (*Chamaerops Fortunei*) planted out for years and unprotected in winter. *Hydrangea paniculata*, Veronicas in variety, also of Fuchsias, with, at some distance, Bays, Arbutus, &c., killed long since in other localities. Parallel to this, and of equal length, is one of the sights of the place—the Araucaria walk. There are not many gardens in Ireland, in at least three provinces, that I have not seen, but nothing like this. The trees are a considerable size and remarkably healthy, and most of them are now bearing catkins, some male and some female. Higher up in the Coniferæ ground is the largest and oldest Chili Pine in Ireland, and that you have nothing to compare with in England, except that at Dropmore. The height is upwards of 60 feet, and at present it bears immense female cones. Adjacent is a *Pinus cephalonica* 81 feet high, said to be the first received in this country. The Coniferæ were a speciality with the late proprietor, and any description would be utterly beyond your limits or my ability; so I will not further intrude on your space than to acknowledge the courtesy our party received from Mr. Gray.

Clonmel.

WILLIAM J. MURPHY.

Alstrœmerias.—Notwithstanding the heat and drying winds that we have lately had, hardy herbaceous plants have been able to hold their own, and many of them more than that, for they have been very fine this season, and especially is this so with *Alstrœmerias*, which are now, and have been for some time past, quite a sight. The best way to treat them is to have them in masses, and no place is more suitable for this than a border in front of a south wall or fence, where they can have shelter and warmth, as not only does the winter, when sharp, affect them, but they get cut by spring frosts or cold winds when making their young shoots, which they do early, and are then rather tender. In cold heavy lands it is useless attempting to cultivate them without making and preparing a bed, which should be done by digging out the soil a yard or so deep, and draining the bottom by putting in a layer of broken bricks, or some other loose open material, to draw off the water, as then the tubers are left in a comfortable state when dormant, and instead of rotting and dying, they then keep sound, and are able to start with great strength in the spring. To keep the interstices of the drainage open, it is a good plan to throw some half rotten manure over it, when the bed or border should be filled in with light sharp sandy soil, mixed up and prepared for the purpose. The planting may be done at any time, as the plants have to be supplied in pots when growing, after which they may be obtained

in a dry state at rest, and are then best left till the month of March or April, when they should be placed in the ground 6 inches deep and lightly covered, that the young shoots may easily find their way through. All the after attention a bed or border so arranged and started will require is to be kept clear of weeds, and every autumn have a surface dressing of half rotten leaves, which will keep the frost from getting down and damaging the tubers. Managed in this way, the plants improve year by year, and quite crowd the ground with their stems, which bear large heads of variously coloured, spotted lovely Lily-like flowers that last long in perfection, and are of great value for cutting, as they stand well in water and make a fine snow. *Alstroemerias* may be raised and quickly established from seed, which should either be sown where the plants are to remain, or in small pots, and afterwards turned out, as it is a difficult matter to transplant, so deeply do the fleshy roots penetrate and scatter about.—S. D.

DOUBLE DELPHINIUMS.

To what extent these are grown about the country I do not know, but from their hardy nature and excellent decorative qualities they deserve a wide patronage. I find them just the plants for conspicuous places in the mixed borders, as they reach to a height of 3 feet and 4 feet, and what makes them still more valuable where there is a good representative collection, they embrace colours that are scarce through the summer months amongst hardy plants, as the colours range from the most lovely sky-blue to the richest purple, and their value is further enhanced by the length of time the different varieties continue in flower. I had four sorts in blossom early in June and their flowers continued in good condition for three weeks; since then others have succeeded them, and at the time of writing (August 29) I have out of twelve sorts three now in flower. The first to flower was *Mozart*; this is a lovely variety with rosette-like flowers thickly studded on the stem, the colour being a pale sky-blue, quite distinct from any flower I am acquainted with; *ranunculæformis*, *Madame H. Jacotot*, and *Prince of Wales* all flowered at the same time. The following four sorts flowered in July: *Leon Dubois*, *Sphere*, *Herman Stenger*, and *Dick Sand*. The last named is a striking plant with rich purple flowers.

The varieties now in blossom consist of *Madame W. Schaub*, *Agamemnon*, *imbricatum*, *celestinum*, and *Nymphæ*; this last is the lightest in colour of all, the colour being a bluish white. Some of these have only semi-double flowers, and the darkest coloured varieties have a few small white petals in the centre of every flower. As regards cultural details, they seem to be very easily managed, as I find they will thrive in any fairly rich garden soil. The greatest drawback is with those with very double flowers, which can only be increased by division. Those with semi-double flowers seed freely. When seed can be obtained few plants are easier raised. I like to sow it as soon as it is ripe in a deep pan, and place the pan in a pit or frame. I have just sown the seed of such as we have; the seedlings will be up in a few days, and I shall encourage them to grow by keeping them under glass. They will continue to grow up to the end of November, when they will begin to go to rest. They will remain in the cold frame without any attention up to the middle of April, when they will be shaken out of the soil and then planted out in a reserve border for one year to gain strength before they are planted where they are to flower. I find this is a better plan than risking the small plants to the mercy of the slugs in the mixed borders, for I find it difficult to keep these depredators away from strong established plants, much less from little ones. Next to *Dahlias*, I think slugs prefer *Delphiniums* to anything else. If I had to sow the seed in the spring I would prefer to sow it in the open, as then the plants would start away without any check, but there is a decided gain by sowing as soon as the seed is ripe, as then all the plants will flower in the ensuing summer, so that if it is desired the

colours can be arranged while they are in the trial ground.

J. C. C.

MUTISIA DECURRENS.

The fact of this beautiful climber flourishing as an outdoor plant so far north as Lochgilhead (p. 198) proves what I have long suspected, viz., that it may be grown anywhere in the British Isles as a hardy wall plant, provided a suitable soil and situation can be found for it. Some years ago I saw the plant in a healthy condition growing against a greenhouse wall in Gloucestershire, and I have heard of it as thriving outdoors in two other places; we may therefore conclude that it is only for the want of the trial that we do not find it in similar situations in other gardens. The trial is surely worth making, as it is one of the showiest of orange-coloured flowers we have. I do not think, however, that the present season is the best for planting it out, particularly if the plants have been protected under glass until now, and I think that the trial should not be made until spring, unless in cases where plants are to spare. Whenever the old plants are planted out, it would be well to secure young stock in case of an accident to the old plant, and as Mr. F. W. Burbidge, in a recent number of *THE GARDEN*, refers to my success in propagating it, I may as well state how that success was secured.

As is usual in most matters which puzzle experts, the solution is very simple when worked out in a proper manner, and with my plan of striking *Mutisia decurrens* I never had a failure from the time I first took it in hand, although many good propagators never had a successful strike of it. Some years ago, having a large plant of it, and remarking the many side shoots which it always sends out from the main stem, I thought they ought to root freely if placed in a proper situation. Noting the dense woolly covering to the young growths, it occurred to me that the cause of other people's failures was the putting in of the cuttings in cases or in hothouses, and the consequent collecting of damp on this woolly covering. I therefore took off the stoutest cuttings close down to the main stem (with a heel), put them into small 2½-inch pots, which had been previously prepared and well watered, and placed them beside the old plant in a shady, but airy, *Camellia* house and left them without any further protection. I did not water them for several days, as the soil in the pots was damp enough to keep them up for that time. In about three weeks they were well rooted without a miss. Afterwards I struck many in the same open situation, both cuttings and suckers, simply by sticking them in the soil in which the old plant was potted and there leaving them until they began to root, and then potting them.

Thus it will be seen that there is no cleverness required in striking *Mutisia decurrens*, whatever merit may be attached to conceiving the proper method thereof. I always found the plant disliked fine soil, and so I merely rubbed the soil for putting the cuttings in through the hands, leaving the fibre in it. The best soil for *Mutisia decurrens* is turfy loam and silver sand, and in planting it out it would be well to make a small bed of this compost for it.

JAMES O'BRIEN.

Good distinct Ivies.—Judging by the very general and exclusive use of the common Ivy as a covering for bare walls, one may, perhaps, be excused for preaching once more from that old text, "variety is charming." It is especially so with Ivy, and seeing that we have at least a dozen good distinct green-leaved kinds of robust habit, this monotony is all the less excusable. As a robust growing kind, perhaps none can rival the Irish Ivy (*Hedera canariensis*), but other fine-leaved kinds, such as *H. Rægnieriana*, *H. Glynni*, and *H. dentata*, should also be employed more generally than is at present the case. The large leaved golden judiciously planted here and there among green-leaved kinds shines out like a gleam of sunshine. *H. atro-purpurea* contrasts well with this, or with the dwarf silvery-leaved kinds on low walls or stumps near the house.—F. W. B.

TREES AND SHRUBS.

NOTES ON TREES AND SHRUBS.

Spiræa Douglasi is one of the most distinct of the numerous *Spiræas* now grown in gardens. It has long, shortly-stalked leaves, which are dark green above and covered beneath with a white tomentum. The flowers are red and borne in rather dense panicles. The species is quite hardy, and attains a height of from 5 feet to 7 feet; it is quite at home in almost any soil or situation, and when in flower is a great ornament in any shrubbery.

The Weeping Locust.—Under the name of *Robinia Pseudacacia pendula* there is a distinct form of the deservedly popular Locust tree in the Kew arboretum. The general direction of the branches is upward, but the tips are somewhat pendulous. The principal character, however, resides in the leaves, and the curl of these is so marked as to give a decided and peculiar aspect to the tree. Even at a considerable distance the different colour, caused by the glaucous under surface of the leaves, is conspicuous enough to very superficial observers. As an ornamental subject for the park or pleasure ground this form is thoroughly worth growing.

The first Wellingtonia.—Not the least interesting among the minor objects at the Forestry Exhibition in Edinburgh is the dried twig of the Mammoth Tree, *Wellingtonia (Sequoia) gigantea*, that was first sent to this country. This specimen may be seen in Messrs. Veitch's case of dried botanical specimens. The twig was gathered by Mr. Lobb in the Calaveras Grove when exploring California on Messrs. Veitch's behalf. The collection of cones of Mexican Pines from trees grown in Lady Rolle's famous arboretum at Bicton, Devonshire, was also very interesting. Many of these Pines, however, are, it is feared, scarcely hardy enough for general cultivation.

The Ceanothuses.—Beautiful as are most of the species of *Ceanothus*, their liability to be killed during severe winters has doubtless caused them to have been to a great extent forsaken and neglected. A good many of the very numerous seedlings which have been raised of late years in Continental nurseries are, however, distinctly desirable plants for general cultivation. A rather wide range of colour, from pure white to blue and reddish purple, has now been obtained, and these seedlings are much hardier than most of the true species. It is true that they are cut back now and then, but they readily spring up again from the roots and flower freely enough the same season. This remark applies to countries where the winters are much more severe than in England. What ornamental objects these hybrid *Ceanothus* make, and how useful they are for garden decoration during the summer and autumn months, is evident enough to anyone who has seen the fine set in the Royal Horticultural Society's gardens at Chiswick.

The Blue Ash.—Amongst the numerous exotic timber trees which it might be worth the while of planters to try in many places throughout Britain is *Fraxinus quadrangulata*, one of the most distinct of the North American Ashes. In the "Penny Cyclopædia," Lindley—who was responsible for the botanical portion of that work—states that the species now spoken of is one of the most unsuitable for this climate. Loudon, however, says nothing against its character, and we have seen it growing vigorously enough in many places. In the United States it occurs in dry or most rich woods from Michigan and Wisconsin south to Northern Alabama. The timber is said to be equal to that of the White Ash (*F. americana*), and the trees attain a large size. This species is readily distinguished from other Ashes by the square stems of the young shoots, a distinct wing occurring at each of the angles; the leaflets, which are from seven to nine in number, are sharply serrated, shortly stalked, and green on both surfaces. As an ornamental tree it is inferior to the White Ash.

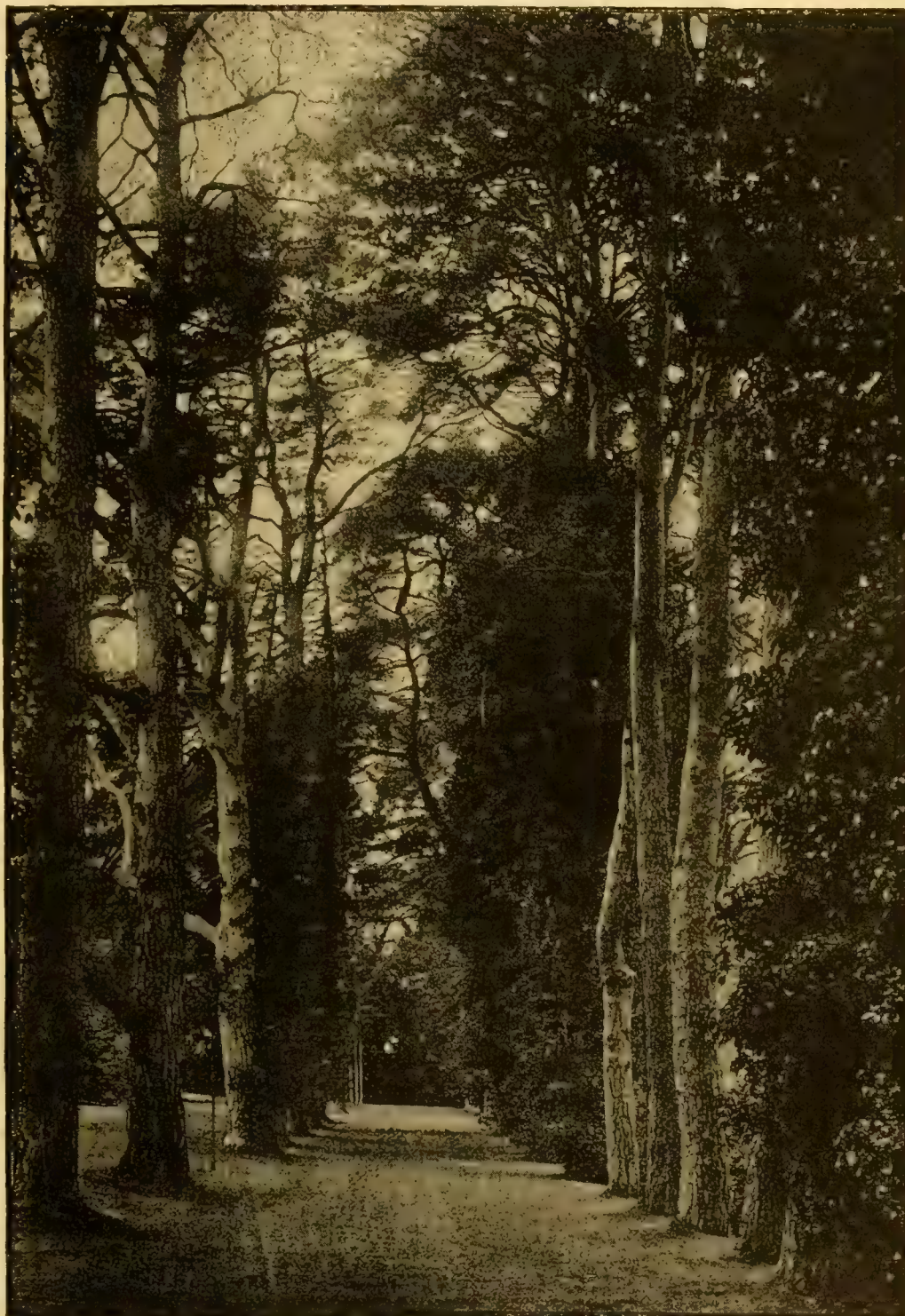
AN AVENUE OF SCOTCH FIRS.

ONE is apt to assume that only certain types of trees are fitted for avenues, and we dare say many

tive Firs affords an effect better than most avenues. It was only on visiting Sir W. Marriott that we first saw a regular Fir avenue, and a very beauti-

old and good, while here and there a break occurs which aids the effect.

In planting avenues of conifers, serious, and oc-



Avenue of Scotch Firs at Sir W. Marriott's, The Down House, Dorset. Engraved from a photograph by Henry Stevens.

would fail to see the good qualities of this noble tree for avenue planting. We at one time had not thought of it much ourselves, though occasionally by a country road a noble line of our na-

ful thing it is among the various charms of his place. It stretches away from behind the house, the stems often clad with Ivy and the ground with turf. This aids the charm. The trees are

casionally hideous, mistakes have been made! Planting the fashionable conifers in avenues is one of the surest ways to ill effect and failure. A case in point is or was Madresfield. Happily, the

trees do not live long, so there is a chance of undoing the harm. Woburn, too, was partially spoiled by an avenue of Araucarias. No one need fear failure with our well-tried Scotch Fir. In cases where there was not room for a broad-spreading summer-leaving tree, the Fir would often suit. A common mistake is not allowing half room enough for the avenue to attain its best size or effect.

Our illustration is engraved from an excellent photograph taken recently by Mr. Henry Stevens, of King Street, Covent Garden, while on a visit to The Down House.

FRUIT GARDEN.

FOXY GRAPES THE BEST FLAVOURED.

I WAS pleased on reading "Scot's" remarks on this subject (see p. 202), because here I have had, for the past two years, a precisely parallel instance in one of our vineries. I was pleased also to find that I had had company in my misfortune, for this I considered it to be. I should, however, have been far better pleased if "Scot" had defined the condition of atmosphere conducive to this peculiar colouring of Grapes. But the definition would be, I fancy, very difficult. Between the instance furnished by "Scot" and the one here, the only difference seems to be that our Vines are planted in the ordinary way in the front of the house, while the others are planted on the back wall and trained down the rafters. Our Vines are trained about 16 in. from the glass, and the rods at sufficient distance apart as just to allow the laterals to meet; the whole roof is therefore entirely covered with foliage.

What I wish to point out is that my Grapes are completely in the shade, as much so as if the rods had been trained to the back wall; in fact, several of the laterals are bent down and tied to the back wall wires, but the colour is the same throughout. In "Scot's" instance, the Grapes on the back wall could not, I think, have enjoyed an atmosphere so much cooler and shade so much greater than those on the rafters as to account for so much difference in colour.

I should like to know if the Vines "Scot" refers to have in previous years coloured in the manner stated, or if this is the first instance of it. I quite agree with "Scot's" remarks as to the flavour of these foxy Grapes, for the samples that I have are far superior to the same variety in an adjoining house and which are jet black; they are also much thinner skinned. But I am not one of those who hold that a bunch of Black Hamburgh Grapes is in fit condition for the table when the berries are jet black and the bloom perfect. It is certainly, so far as finish and appearance goes, but the proper condition for the table will not have arrived until it has hung at least for another three weeks. There is something peculiarly interesting in connection with this case of foxy colour here, that I am tempted to state the case fully, as it may prove of interest to others.

The house is a lean-to, 50 feet long and rafters about 14 feet, and faces due south. Three years ago this house carried a fair crop of Grapes to perfection, the whole colouring splendidly. Two years ago we decided to divide the house, so that one half could be started earlier than the other. The heating medium was four rows of 4-inch piping inside, and as the Vines were planted with their roots wholly in an outside border, a little warmth was kept up by the aid of manure and leaves. The Vines were started very moderately about the end of January. They broke well, and showed plenty of bunches. They continued to progress nicely, and, carrying a heavy crop, commenced to colour in May. In the early part of June I took away the material used on the outside border, and had no sooner done so than the weather, which previously had been very fine, changed, and we experienced a week or more of very cold and sunless weather. Until this season I always blamed myself for taking off that covering, as I considered the Vines had during that week

received some sort of check at their roots, sufficient to account for the Grapes not colouring, for colour they would not. I was greatly disappointed, as this was the first instance I had had in my twenty years' experience of badly coloured Grapes. One day on tasting one—little more than red—I was agreeably surprised to find it was quite ripe and perfectly sweet. Cutting was commenced forthwith. The Grapes were very much appreciated at table, so much so, that my employer in a week or so afterwards told me that he and the other members of the family preferred them to black ones; that they were so much richer and sweeter; that they had thinner skins; in a word, they were the best Grapes they ever had; and as for their colour, they rather liked it than otherwise, it was so unique. The highest encomiums as to their high quality of flavour were sounded by the many visitors who partook of them, and one gentleman even went so far as to declare they were not Black Hamburgs at all, but a noted Grape they had on the Continent, the name of which he could not recollect, but could always tell it by its colour and flavour. These encomiums, bestowed so freely and almost daily, took off for a time the sharp edge of my chagrin, but I was far from satisfied.

The house this season was started a trifle earlier; the fermenting materials again applied just as the Vines were breaking. The daily routine of damping down, airing, and shutting up was very carefully attended to, as well as the tying down and stopping of laterals, &c. The Grapes set well, were early thinned, and everything done to ensure them carrying the fine crop to a successful finish. To prevent them receiving the supposed check the material was left on the border all the summer. This season they were again a failure as regards colour, but the flavour is most excellent. Now the behaviour of the other half of this house has been quite the reverse; the bunches there, though not quite so large, have coloured finely throughout both seasons. This same house has carried enormous crops both seasons in question, and I now hazard the opinion that I have cropped the Vines too heavy. At the same time this can hardly be the case, seeing that this year's crop is by far the heavier of the two, while the Vines are looking stronger and healthier than ever, with fine, thick, broad leaves, strong well-ripened wood, and a hearty constitution. The crop they carried would run from sixteen to twenty-six bunches on a rod of 12 feet; the bunches would range from half pound to $\frac{1}{4}$ pounds. I have seen examples of Vines which had been overcropped, but in that case the wood, leaves, and bunches all looked so very puny and weak as if the whole constitution of the Vines had given way under the treatment. Now, as to shade and colour; in the late half of this house where the berries have coloured beautifully more than double the light gets in here than in the early half, owing to two young Vines lately planted, and from one of which in the middle of the house I am running up three rods; two of these rods have not more than half reached the top, as they were stopped. At the same time the foliage of the other Vines is not nearly so broad; consequently many places remain unfilled and where the sun can shine through at will; whereas in the early house the thick canopy of leaves completely hides the glass. Usually, bad coloured Grapes are associated with bad flavour, but in the instance given by "Scot" and the one here furnished it is entirely the reverse. I enclose you samples from both houses, and will be pleased to have your opinion as to flavour, &c. I would also be pleased to hear if any other of your readers have had any experience with this, to me, interesting subject, with their suggestions as to probable causes.

ANOTHER SCOT.

* * The samples of Grapes sent with the above by our correspondent consisted of a bunch of jet black Hamburgs and a similar bunch with the berries of a reddish purple, in fact quite "foxy." These latter were much sugary and of richer flavour than the black berries and the skin was thinner; in short both samples fully bear out what our correspondent says respecting them. This is

not only an interesting, but an important question, and we invite discussion upon it among our readers.—ED.

A FAIR CROP OF FRUIT IN THE OPEN AIR THIS YEAR.

THIS may be seen on the borders of Suffolk and Norfolk, about four miles from Thetford, in the gardens of Elvedon Hall, the country residence of the Indian prince, H.H. Duleep Singh. The soil is especially light, but the garden, which abuts against the public road to Thetford, is by no means sheltered; on the contrary, it is rather open and exposed, being surrounded on three sides by fields. And yet here, in this season of general bareness and barrenness there is a fair, though not a full, crop of Apples. Pears and Plums are fairly plentiful, especially the latter, and this is a season that may in general terms be pronounced plumless. Most of the trees are on walls, and there are fair crops on every aspect. The whole of the trees are under skillful treatment, Mr. McArthur being well known as a successful fruit grower. But no special treatment nor protection was given to the trees, and yet there they are fairly furnished with plenty, while most gardens are almost bare of fruit. It so happened that I had just visited Lynford Hall, in Norfolk, about ten miles distant. The physical characteristics of the two gardens were very similar, light soil extending for miles around, and Lynford perhaps having the advantage in reference to shelter and elevation, and yet the former garden was specially bare of fruit in the open air, while the latter is specially fully furnished. The indoor crops at Lynford abundantly prove that everything that skill can do to command crops in the open has been done. At Elvedon, the fruitfulness of the season can hardly be attributable to any special varieties, for considerable numbers of most of the leading sorts are grown, and Gage Plums were almost as plentiful as Victorias. It seems quite a mystery, though I have tried hard on the spot and since to solve it. While hundreds or thousands of crops have been taken to right and to left of it, before and behind it, here is one left, as if it were the gift of fortune or the result of caprice. I, however, venture two guesses as to the most probable causes of this fortunate exemption from destruction of the fruit crops in these gardens. They seem contradictory, but possibly they worked in harmony towards the same end. The first is the openness of the garden already referred to. This would favour a gentle movement of the air, and in that motion the fruit trees may have found their safety. The well-known experience of horticulturists is that it is the still, motionless air that kills fruit tree blossoms. Its mere motion, even if of the same temperature, works towards their safety. Then a great deal of planting has been done on the Elvedon estate. This, although not contiguous to the kitchen or fruit garden, is probably within measurable distance of it, and it is well known that woods, especially perhaps young and vigorous growing and probably particularly Evergreens, tend to ameliorate and soften the air. But these guesses are merely offered for what they are worth. Right or wrong, they do not affect the important fact, that it is my pleasure to record, that in one Suffolk garden at least there is a fair crop of fruit of all sorts in the open air this year. It would hardly be fair to leave the Elvedon gardens without adding that Grapes, Peaches, Melons, &c., are also remarkably well done under glass, the Grapes in bunch, berry, and finish being remarkably good. Returning once more to the kitchen garden, some remarkably fine specimens of that incomparable Gooseberry, the Ironmonger, reached to the top of a north wall. These were trained horizontally with upright branches at regular intervals trained up vertically from the horizontal base. The bushes were very fine examples of this old-fashioned mode of training, and were studded with fine fruit from top to bottom, showing how valuable for autumnal dessert fine Gooseberries are, and how prone this longest keeping of them all is to burst through autumnal rains when grown as

bushes of the ordinary forms. I would earnestly recommend the adoption of the safe and successful old plan so skilfully revived at Elvedon of devoting a portion of the north wall wholly to late Gooseberries. With a good wide coping to throw off drip, and a wasp-proof netting, Gooseberries may be kept till October or even later in the south, and until near Christmas in the north. Red Currants treated in the same way will hang even longer on the bushes and prove invaluable for tarts and other purposes. D. T. FISH.

MADRESFIELD COURT GRAPE CRACKING.

WHAT a pity it is that we hear of so many failures with this fine Grape, which possesses not only a handsome appearance, but a fine flavour and free bearing combined. It is a Grape, moreover, which can be had in use from the beginning of July till the end of September. I have kept it in fairly good condition till November, but by that time it is liable to shrivel; it will do quite well in the same house with Black Hamburg. The temperature for that variety seems to suit the Madresfield Court. Its fault, and the only one I know belonging to it, is that it is liable to crack at the point of the berries. Some say it cracks close to the footstalks, but I never saw that occur. The cause, in my opinion, of the cracking is overpressure of sap, and the thinness of the skin causes the splitting. What is required is a counteraction of the flow of sap, brought about by a special treatment of this variety. It generally happens when the berries commence to colour. Some try to remedy the evil by cropping too heavily, by which means another failure sometimes occurs, namely, that of the berries not colouring properly, nor do they swell to their full natural size. Others withhold water from the roots as soon as the first sign of colouring appears; this in many cases does not prevent the splitting. I have grown the variety in question for six years with success; the first year a few berries cracked, but since then we have had no cracking. Cutting the branches half way through between the main stem and bunch I do not think of any use, as I have seen the berries split more on Vines that were so treated than on the branches which were not cut. By adopting the following system we generally have the variety in good condition without cracking. Our Vines are planted inside, the roots having free access to the outside border through arches. As soon as the berries commence to colour we cover the outside border with lights to throw off heavy rains, our soil being of a heavy tenacious nature; otherwise if the soil was not so, I do not think it would be necessary to cover the border. The inside border is freely watered when necessary. Upon the commencement of colouring we allow all the laterals to grow away at will. Some may imagine that by allowing these laterals to grow so freely that light is excluded too much. That is not the case, as previous to colouring they are kept closely pinched. I think free extension of the laterals is the only prevention of the evil. In our case this has always prevented the splitting. A free admission of air night and day, too, is essential in assisting colouring; the air, too, should be kept buoyant and free from excessive moisture by keeping the hot-water pipes warm. I think if those who have failed to grow the variety and condemn it as worthless would try it on the system I have endeavoured to explain, I think they would not have cause for regret. Some, I know, adhere to the hard and fast rule of pinching the laterals of this variety in the same way that they do other varieties, but in the case of Madresfield Court it will not do.—E. MOLYNEUX.

—"G. J. B." (p. 172) asks, "What is the cause and prevention of Madresfield Court Grapes cracking just before they ripen?" This is a question which annually crops up and puzzles many gardeners besides "G. J. B." About this time last year the same question was asked, when several gave their experience in regard to it. My experience with regard to berry cracking is, however, very limited, for this reason, that in the garden in which I have served and where Madresfield Court

Grapes were grown extensively, cracking to any extent was never experienced. This was at Madresfield Court gardens, where the Grape in question originated. The late Mr. Cox, the raiser of it, used not to take any special precautions to prevent cracking, for all the Vines had the same treatment, and the Madresfield Court succeeded equally well in the late as in the mid-season vineries. Sometimes a few berries would crack, but this invariably happened when the weather was unsettled, as it necessitated the houses being closed at the top, as top ventilation was given by sliding lights. Even then we could prevent cracking by giving air as soon as practicable to clear the berries of the condensed moisture which had settled on them in consequence of the lights being closed. I ought to mention that at no time after the Grapes began to colour did Mr. Cox allow the night temperature to fall below 60° with slight ventilation at the front and top. If we are to gather any good from Mr. Cox's practice, I think that this hint respecting the night temperature should be heeded, for by keeping the thermometer at 60°, the houses have to all appearance when walking through a warm and buoyant atmosphere. This year I had half-a-dozen Vines (Madresfield Court) in pots growing between some young Vines that were planted the preceding year, but which were shortened back to the bottom wire when pruned in the autumn. The pot Vines shared the same treatment as the permanent Vines until the berries showed signs of colouring, when syringing was in their case discontinued, but the permanent Vines were syringed as before and for some time after the Grapes had commenced to colour. Air could not be admitted at night, as we wanted to induce the formation of as much growth in the permanent Vines as possible. Still cracking did not appear except in half-a-dozen berries, so I came to the conclusion that a high night temperature with air given early in the morning saved them. The night temperature was 65°.—J. HINTON.

—In order to prevent the berries of the Madresfield Court Grape from cracking, the Vine must have liberal treatment, that is a sweet open border well drained, a good supply of water at the roots during the growing season, with plenty of heat and atmospheric moisture until the berries are half coloured, when more air and a drier atmosphere may be gradually given until the berries are ripe. Treated in this way, "G. J. B." (p. 172) will find the Madresfield Court not only free from cracking, but one of the best of Grapes.—JAMES SMITH, *Waterdale Gardens*.

New Hawthornden Apple.—One of the finest of mid-season Apples is the new Hawthornden. It has all the good qualities of the old Hawthornden, with the addition of being nearly double the size and being an excellent keeper. I have some young trees planted only two seasons, and they are bearing on an average half a bushel of fruit each. I can therefore strongly recommend anyone contemplating planting during the coming season to include this in their selection of culinary sorts. I may also mention that in planting Apples in gardens it is decidedly the best policy to have trees that will commence to bear fruit at once, viz., dwarf bushes that have been transplanted and summer-pruned, so as to get them well covered with fruit spurs. Such trees are cheaper in the end than those that have had no attention bestowed on them, for when once they are fairly started into a fruitful condition but very little attention is needed to keep them right. On the other hand, in planting orchard trees, such as standards, that are required to develop large heads, there can be no question that it is best to plant young trees, as they rush off into growth of both root and branch, and soon form large trees; but for garden culture of large Apples like the above, I can confidently recommend the dwarf bush to any other form of tree; it is far superior to the rigid outline of the pyramid, in which the topmost branches monopolise more than their share of sap and sunshine, while the open bush, being more natural, equalises the

strength of the tree, as well as all parts being equally favoured as regards position. This variety has already been highly spoken of in fruit reports from various districts, and is evidently suited for general cultivation.—J. GROOM, *Gosport*.

NOTES.

Manure water for Orchids.—In the *Orchid Album* for the current month is a figure of *Cypripedium insigne*, and, speaking of culture, we are informed that "a little manure water applied (i.e., to well-rooted plants of *C. insigne*) during the growing season is a help to them, as the roots are of a fleshy nature." Advice of this kind is likely to mislead young or inexperienced Orchid growers, who might be tempted to give manure water to other Orchids having roots "of a fleshy nature." Seeing that three-fourths of epiphytall Orchids have fleshy roots, this teaching opens up a wide field. If Mr. Williams' Orchid grower gave manure water to *Aerides* and *Vandas* or to *Cattleyas* because "their roots are of a fleshy nature," I should not like to hear of the results. A friend of mine had some valuable *Cattleyas* injured very badly by manurial stimulants, and another man had his *Vandas* utterly ruined by manure water. Advice of the above kind may lead to much harm being done, and is scarcely what we have a right to expect in the *Orchid Album*.

Cost of Narcissus bulbs.—One result of the popularity to which this genus has attained has been to cause a rise in the price of the best kinds. But the variations in the catalogue prices is very curious. Two or three years ago *N. maximus* used to be quoted retail at 6s. per dozen; now it is double that price. I heard of a Dutch firm who hold some true stock asking £6 a hundred for it this season. *N. bicolor maximus* is offered in some lists at 1s. each; in others at 2s. 6d. For years some London market gardeners have sold their surplus stock of *N. poeticus* at 8s. or 10s. per bushel. How many bulbs there may be in a bushel I have not the least idea, but, as a friend in the trade once told me, the fewer the better. I see this kind offered in THE GARDEN advertisement, however, at 13s. per thousand, and all the common kinds may be purchased most cheaply at auction sales for naturalising purposes and plantations on a large scale. Some of the best kinds are "cornered;" in a word, our good friend, Mr. Barr, seems to have a monopoly of them.

Chequered Daffodils is the name by which honest old John Parkinson knew the meadow Fritillaries two centuries and a half ago. *Fritillaria Meleagris* is a true native, once not uncommon in the Thames-side meadows at Mortlake and Kew, and even yet I believe found in a pasture near Pinner. There are now several varieties, white, blush, rose, purple, some chequered, some faintly so, or not at all, but all beautiful, reminding one of Chinese lanterns as they sway and tremble in the sunlight of a showery April day. They are so quaint and attractive when seen at their best, that the wonder is that they are not more often seen. In old-fashioned gardens they seem particularly at home. How lovely these flowers and true Daffodils, and Crown Imperials, and the host of old beauties which Parkinson loved would be at Hampton Court, for example; no other flowers would harmonise with that old red-brick palace half so well.

Good culture works miracles, but more especially so if soil and other natural surroundings are suitable and harmonious. For example, I know an old garden wherein the white Martagon Lily is most luxuriant, growing among Rose bushes without any attention year after year. This last flowering season one stem bore thirty-three flowers and many others over twenty flowers on a stem. Hardy Cyclamens in the same garden are now literally covered with bloom. Again, how many people fail with the vernal Gentian, "Fair Lucy of Teesdale," as Ruskin calls it in his "Proserpina," and yet a friend on the Nottingham clay says he had a tuft of it which bore ninety flowers this

season, and the Austrian Bellflower (*Campanula pulla*) forms a patch in his garden a yard in diameter. Here, without special attention, *Lilium testaceum* grows 6 feet high and bears nine to thirteen flowers on a stem, and one clump has ten or twelve stems. There are some successes, fortunately, in every garden.

Daffodils and Lilies seem just now to be the most popular of all hardy bulbous flowers, and so we need not feel surprised that Mr. Ware should devote an especial catalogue or list to them. *Narcissi* for the spring and Lilies for the summer and autumn, and but few other flowers can compete with these for grace and beauty. Queen Iris must not be forgotten, but for the nonce we will confine ourselves to Lilies and Daffodils, anent which Mr. Ware in his list, just now published, affords us some valuable hints and information. Special lists of this useful kind are very handy for present use and for future reference, and the fact of their being just now produced is an index of the popularity to which these hardy bulbous flowers have attained. That the steel age should also be the era of hardy flowers is a lucky coincidence, as many a gardener can testify from experience. In a word, flowers for cutting and indoor ornament were never so abundant and so beautifully varied as they are now.

Sympathetic variegation.—Mr. Jenner Weir's communication on p. 175 is very interesting, coming, as it does, on the heels of two or three observations on the same point by equally independent observers. That variegation can and is produced by inoculation is now proved past a doubt, but whether the contiguity of a variegated with a green-leaved plant does now and then lead to the latter becoming variegated is quite another matter. In all questions of this kind we must be "as wise as serpents and as harmless as doves." What we want is more, and more exact, evidence. In that country where variegated plants are especially fashionable and welcome—I mean in Japan—the gardeners are said to possess a secret of rendering any green-leaved plant variegated; but is this true? Indeed, I believe it is not, for were it so, why should variegated forms so easily obtainable be prized so highly? As things are, all we can do is to watch and make careful records while waiting for more light.

New Narcissi or Daffodils.—The short and lucid notes by "W. E. G.," on "Recent Plant Portraits," are always very interesting, and I am sure very useful also to many who, like myself, like to know something of the novelties of other countries besides those of our own. I never see Regel's *Gartenflora*, for example, and so might never have heard that some new Narcissi, to be sent out by Messrs. Damman, of Portici, near Naples, are figured therein, had it not been for the interesting note on p. 181. I now am pleased to find that two or three of these new kinds are offered in Messrs. Collins and Gabriel's bulb catalogue for the present season. *N. Regina Margherita* is therein described as having "flowers larger than maximus, perianth white, cup golden yellow," and *Umberto I.* is described as the "largest of all the Trumpet Narcissus." I hope these descriptions may turn out correct. It is unfortunate that some of these new forms, such as *præcox* and *gracilis*, have names which have already been given to varieties of the *parvi-coronati* group. To prevent error it must be remembered that they are of the Daffodil or Trumpet section.

Good Phloxes.—A very successful cottager asked me to go and see his garden two years ago; so I went and looked over his crops, mostly very good of their kind, but finer than anything else I saw were his herbaceous Phloxes. He had about a dozen good kinds, all large, bright, and varied in colour. But, fine as were his flowers, I found out that his next-door neighbour had beaten him at the village flower show. "How did he manage to win?" I asked. "Well," said the cottager, "he came in here one day, chewing a straw, and asked me for a few bits of my Phloxes; so I gave him a bit of all the kinds I had, and he flung them over the fence as if they were stones but next

day he dived out a great trench, and filled the bottom with manure, and then filled it half full of soil, on which he planted the roots. You never saw," he continued, "such heads of bloom as those he staged. The stems when growing were 6 feet high and as thick as walking-sticks, with heads of flowers like a bee-hive on the top." "And you were sorry you gave him plants, I suppose?" I asked. "No," he answered; "for he has taught us all hereabouts how to grow good Phloxes."

The Torch Lilies.—No plants are more precious for autumnal effects in the garden than are these, and we have never seen them finer than they are this season, the late hot dry weather having suited them. I am glad to hear that Mr. N. E. Brown, of Kew, is working out a review of the different species—a work much wanted by gardeners. The varieties of *T. Uvaria* are the most robust and floriferous for general purposes, and *T. caulescens* is the best perhaps as a foliage plant in mild localities. The pretty little *T. Macowani* is quite a gem in its way, although not so effective as the common kinds, which are just now throwing up great sheaves of their glowing flower-spikes everywhere. VERONICA.

FLOWER GARDEN.

NOTES ON CHOICE HARDY FLOWERS.

CAMPANULA ALLIONI, at present so rare and one of the most distinct and beautiful of the alpine Bellflowers, is now in a good state for propagation. The underground stems have run freely, and their verdant tips indicate their position and strength; these may be carefully bared and slipped from the stool, and they will be found for the most part to have a little fibre on them. They grow into nice little plants if potted in sandy loam with a few chips of limestone. But where there is a strong spare plant for purposes of increase I prefer to take it up bodily, and in dividing it allow to each division a part of the old root. After all, much depends on the time these operations are done. There should remain plenty of time for root action before the winter sets in, otherwise the best divisions will decay whilst in their dormant and unestablished condition.

C. ZOYSI, another alpine gem, is now in flower, but pretty as the bells are, the dark green tufts of nearly round entire leaves scarcely half an inch across are also very noticeable. The flowers are quite an inch long, cylindrical, cornered, and somewhat contracted near the end; they are in sparse clusters on short stems, of a blue colour in shades. No one could be otherwise than delighted at seeing a well-established bit in flower; but in slug-haunted quarters it would be in great jeopardy, for at most a fair-sized plant would serve only for a meal or two. They are very fond of it; it is therefore safer to grow it in a pan, keeping it well dressed with wood ashes.

DOUBLE WHITE HEPATICA.—Seeing is believing, and such a flower I have seen in my own garden during the past week. I cannot, however, attach much importance to such a fact when the flower appears at such an abnormal period as the month of August; moreover, the plant is known to be one which produced double blue timely flowers, and it should also be added that since the day this white one opened it has shown a tendency to turn blue, so that at the age of four days it is greyish with a trace of blue.

SCILLA PERUVIANA, or *pyramidalis*, is, I believe, but seldom flowered well, at least in these northern parts. The ample tops are no guide to what we may expect, for these exist when the roots are anything but strong and healthy. It loves warmth both from nearness to the surface and the light character of the soil. I fear we have planted it too deeply; anyhow, bulbs which I took up in early summer that were 6 inches deep were in a dwindling state. They were placed in a warm sandy bed, scarcely covered. A few days ago they were examined, and found to have made fine long roots, whilst the quality of the bulbs was much improved in firmness, also in size, the new leaves

being broader and stouter. As a matter of fact, I never flowered this Squill but in light loam and the sunniest situation I could give, and I do not see that there is much difference between having a bulb killed or keeping it in flowerless, sickly existence, even supposing that the frost would kill it if not deeply planted. Probably the present is as good a time as any to lift this bulb.

SAXIFRAGA STRACHEYI is not without good summer qualities; being of the large-leaved or Megasea section, it has not only the fresh and bold foliage of its allies, but a distinct erect habit, bronzy tints and well defined fringe. I find that plants require to be several years old before they produce their handsome spring flowers. To get effect a batch should be brought on all of one age, and to get stock two or three plants may be cut into as many parts as there are crowns, large or small; the merest bit of the outer part of the root-stock will suffice for each, supposing the cutting is done early. If set in sand in full sunshine roots are quickly formed, and before they get long all might be potted.

SAXIFRAGA CUSCUTÆFORMIS is a charming plant with its *Anæctochilus*-like leaves, but it seems to require rather odd treatment with me not merely to grow it, for it cannot be said to be a bad grower, but to bring out the foliar markings clearly is the difficulty. It is only when the succulent brown and green leaves, with their delicate silvery veins, the hair-like stolons, the reddish air-roots of the suspended offsets, and the white moth-shaped flowers are all developed together, that this pretty Saxifrage can be said to be in character. It enjoys moisture and a little shade in the hottest part of summer, and any kind of light stuff will do to grow it in if it will hold moisture. It stands 12° of frost if under cover, so that the hairy foliage is kept dry, for it is evergreen. It is a most interesting object for frame culture, in which way I have grown it in dingy town quarters, but in purer air it will do well enough out of doors in summer. J. WOOD.

Woodville, Kirkstall, Yorks.

MILLA BIFOLIA.

WHEN this beautiful bulbous plant gets better known I feel sure it will rise rapidly into favour. In my opinion I think it one of the most valuable of this class of plants. From what I had heard and read of its behaviour I expected to find it a difficult subject to deal with, but if one season's experience is any guide, I should say that it is about as easy a plant to cultivate as the Hyacinth. I purchased a dozen bulbs last December, and when they came to hand I placed them in a paper bag and hung them up in the fruit room, where they remained until the end of March. They were then planted in a border without any preparation of the soil, but it may be useful to say that the soil is fairly rich and not very heavy and well drained. The bulbs were planted in a clump, and were put about 2½ inches below the surface and about 4 inches apart. Ten out of the twelve bulbs grew, and the Grass-like foliage appeared above ground about the middle of June; a month later the flower-stems began to rise out of the soil, and on August 2 the first flower opened. Each of the first formed stems produced three blossoms, but I have not had more than two on one stem open together. The flowers are star-shaped, 3½ inches in diameter, pure waxy white in colour, and quite flat, and what adds so much to its appearance is that there is a degree of lightness and elegance of bearing about it which makes it quite characteristic amongst bulbous plants. I ought to say that a second flower-stem is now appearing on most of the plants, which, although weaker than the first, promise to keep up a succession of flowers for some time to come. I may further say that the first flowers which opened have for the most part formed seed-pods, so that there is every appearance of its seeding freely. I may also state that I have found it necessary to support the flower-stems with a neat stick, and that my plants have been well supplied with water in dry weather. As I write from Somersetshire, it would be interesting to know how it has behaved in other parts of the

country, for a bulbous plant that will produce such a number of pure white flowers in the month of August, and revel in the tropical heat we have passed through, is much too valuable to remain unnoticed, and its value is further enhanced by the simple course of cultivation necessary to secure success. J. C. C.

DAHLIAS AT SLOUGH.

THIS season, Mr. Turner has planted a very large portion of his nursery with Dahlias, by far the largest proportion of them being the show or self varieties. I went to see them about a fortnight ago, and even then nearly all the varieties were in full bloom, the hot weather having brought them on much more rapidly than usual. A large space was planted with fancy class, that is the striped, spotted, and tipped varieties. A spacious quarter was also planted with the bouquet kinds. I was told the single varieties were in another nursery. Mr. Turner grows a large quantity of them, and has raised some very fine varieties from seeds, but as he is a florist of the old school and cannot take kindly to single Dahlias, he is ready to supply the public with what they want, but it is quite evident that single Dahlias are not considered of the first importance at the Slough Nurseries. My own opinion of them has been considerably modified this season, and I fully believe that they will fall in popularity as rapidly as they rose. It is difficult to make any improvement in the form of the show Dahlias now, so perfect are they; but there is yet ample scope for the production of new colours. For instance, two of the new varieties sent out by Mr. Turner this year have proved themselves to be good additions to colours. Mrs. Gladstone is a fine light variety, a very delicate pale pink; and Ruby Gem has even surpassed the great expectations formed of it last year; the flowers are large, well formed, and brilliant in colour.

SELECT VARIETIES.—Amongst older varieties, the finest of the dark kinds is George Rawlings; the habit of the plant is certainly not good, but the rich dark crimson-maroon flowers are superb. William Rawlings is a deep crimson-purple, and in its peculiar colour is unsurpassed. Ovid is a closely compacted, well-formed flower of a rich puce. Pioneer, a splendid glossy maroon with a suspicion of scarlet, is distinct from any other, and of fine form. Prince Bismarck is near Ovid in colour, large, and of fine form. A few of the finest crimson and scarlet varieties are Chris. Ridley, deep rich crimson; John Henshaw, rich ruby-crimson, a well-formed flower; John Standish, bright reddish crimson, finest form, very constant; Joseph Green, a very fine decided crimson, high centre, and good outline; the yellow and scarlet, or crimson-shaded flowers, are well represented; Constance in this class is very fine, the flowers large, full, and constant; Gold-finder, yellow, with red margin; John Bennett, a very distinct variety, yellow and scarlet; Joseph Ashby, a perfectly formed flower, with an orange shade; Hon. Mrs. Percy Wyndham is a grand flower in this class. The best white with scarlet edge is, perhaps, the old variety, Lady Gladys Herbert; Ethel Britton is a finely formed white, with reddish purple edge. Of yellow flowers, Muriel is a good new variety, with a shade of buff in the yellow; John Neville Keynes is a fine yellow variety, and Toison d'Or is still well to the front; it is a large clear yellow flower. Mrs. Henshaw is still one of the best formed and most constant of show varieties; when shaded it is pure white. Herbert Turner is a tall-growing superb white variety; it has a tinge of lilac on the outer petals.

The FANCY DAHLIAS have been greatly improved in form and variety of markings during the last few years. A few of the very best are Annie Pritchard, Charles Wyatt, Edward Peck, Grand Sultan, Henry Glasscock, John Forbes, Mandarin, Miss Browning, Rebecca, Rev. J. B. M. Camm; all the above were raised and sent out by Messrs. Keynes, of Salisbury. Other fine varieties are Laura Haslam, Mrs. Saunders, and Peacock. The little bouquet Dahlias we find more useful than other flowers for cutting all through the

autumn months; they are all useful for this purpose. Gem, scarlet, and Lady Blanche, pure white, should be grown by the dozen in large gardens. The National Dahlia Society has done much to again bring the Dahlia into a more prominent position both as a garden and show flower. The exhibitions held at the Crystal Palace have been much appreciated by the public, and they are creating an interest in the Dahlia which has spread into country places, and has been felt at local flower shows. Many do not care for Dahlias, the flowers being not to their taste. Indeed when the show Dahlia was at the height of its popularity a quarter of a century ago, Dr. Lindley wrote in favour of the Phlox, recommending its grace and elegance in contrast to the "lumpish Dahlia." A good gardener should find room for both in his garden, as well as for the elegant Gladiolus, and it is very doubtful taste to say the least that would set one against the other. Comparisons here may well be avoided. J. DOUGLAS.

A FEW GOOD PENTSTEMONS.

TAKING the Pentstemons of the florist's section into consideration, few, if any, other plants contribute more largely to the attractiveness of the open-air garden at the present time. At present I will confine myself to a few remarks respecting



Flowering stems of Pentstemon Murrayanus.

the species of Pentstemon, all of which are very desirable garden plants. All are beautiful, from the deep scarlet of *P. barbatus* Torreyi and *P. Bridgesii* to the almost pure white of *P. Digitalis*. Moreover, nearly every hue of purple and blue colours are represented, and that, too, in no mean way, yet with all these good qualities Pentstemons are comparatively rarely seen in large private gardens, although the commoner kinds adorn many a cottage garden. The finest clump of *barbatus* and *gentianoides* which I have seen were growing in front of an old cottager's window, tended with care every morning and evening. With the florist's varieties, although one gets a great diversity of colour, the extremes of colouring are not nearly so marked as in the species, nor yet is the form so varied. It dispenses too with the trouble of raising a yearly stock, a feat hardly within the province of those who are likely to give them a place in their gardens. The variety in size and habit of the various species of Pentstemon suit them admirably for nearly all positions, both in the mixed border, the flower bed, or on the rockery.

P. CONFERTUS, of which there are two or three varieties, is well fitted for the rock garden, the dwarf form especially seldom attaining more than 6 inches in height, and forming a dense carpet of fine green leaves, and from which rise in great profusion numerous clustered heads of bright blue attractive flowers, beginning in early summer and continuing well into August. The taller forms

are also very desirable for higher positions, sunny if possible.

P. MENZIESII and the variety *Scouleri*, a shrubby species of merit, as a rock plant requires a rather sheltered situation, and unless attention be paid with top-dressing and renewing of soil yearly, it has a habit not very commendable of dying by inches, but, fortunately, from its readiness to root if pegged down, a stock is readily kept up. The flowers are rosy colour, produced from June to August.

P. RICHARDSONI, a beautiful scrambling or straggling species, specially adapted for hanging over large stones or old walls in the rockery, failing as it does in graceful festoons, which are enlivened with its large blue flowers, forms a very great feature all through the summer. The soil should be deep and rich, and the roots partially shaded, which may easily be done under cover of the wall.

P. MURRAYANUS is unquestionably the king of Pentstemons. A few sprays of it are represented in the annexed engraving. It is a magnificent plant, but unfortunately, from the difficulty of keeping it free from damp during the winter season, it is very scarce as an outdoor plant. It may, however, be very satisfactorily grown as an annual; sowing the seed early in spring, and growing on in a little heat, they will flower the following summer, although not so strong and robust as those that have chanced to winter a mild season outside. With us it grows about 3 feet in height, producing panicles of tubular showy intensely scarlet flowers. The leaves are large, handsome, glaucous, and very effective. A first-rate border plant. It flowers late in summer, August to October, and is now one of the showiest border plants we have. Any that have not flowered may be lifted early and wintered in the frames, and these will make the strongest plants the following year.

P. PUBESCENS, one of the oldest, having been introduced considerably over a century ago, is an excellent border or flower garden plant, and as it is perfectly hardy, it is a most desirable subject in gardens where little trouble can be given to bedding. It grows about 2 feet, of a compact, tufty habit, and has pretty oval leaves; the flowers are bell-shaped, spreading at the mouth, varying from light to rosy purple, nearly white inside. July, August, and September. Native of United States. Amongst others may be mentioned *Hartwegi*, *heterophyllus*, *ovatus*, &c., all useful late summer flowering plants, easily grown and quite hardy, at least in the southern counties. K.

PLANTING DAFFODIL BULBS.

IN THE GARDEN (p. 182) we are told by "S. W." that "October and November are the best months during which to plant Daffodil bulbs." That it is a good and convenient time, so far as bulb dealers are concerned, I admit; but that it is absolutely ruinous to floriferous bulb growth after the first season, the remarks of "J. S. W." on p. 203 amply prove. I will repeat what "J. S. W." tells us as a warning to those who plant bought bulbs of *Narcissus* in October and November, a very bad plan and one now too prevalent. If they continue the practice of late planting, the following quotation will show them what results they may expect: "We have been planting Daffodils," says "J. S. W." "for several years, and they have always been planted in October and November (bought bulbs), and have invariably bloomed first-rate the year after, and then gone to Grass, comparatively speaking, every season afterwards, and this, too, in the sunniest situations." In a word, the bulbs develop the flower-buds actually inside them when purchased, but fail to develop blossom germs the following year in "J. S. W.'s" soil and climate. Whether this is due to cold soil or to an exposed and severe climate is more than doubtful; indeed I am convinced that this failure is more likely to be the natural result of the late planting of bulbs which have been too long kept out of the soil. Of course I know that bulbs may be kept out of the ground a year, and will then bear

forcing and flower well, a practice formerly recommended by London, and resorted to for very early forced bloom. Of course, in this case the bulbs were utterly ruined, and were thrown away after flowering. Now-a-days, however, the best cultivators of bulbs for early forcing put up their bulbs as soon in August or September as they can, so that they may form good root-growth out-of-doors ere they are placed in heat to flower. Our Daffodil roots dug and replanted in July are now rooting freely in their new quarters, and, as I know by several years' experience, will flower as well next March and April as if they had never been disturbed; indeed, I believe better, as some kinds had become a little crowded. If the next year's bloom was all one had to strive for, then I grant that time of planting is not of such moment; since, if the flower germ is in the bulb when purchased, they are sure to bloom, even if kept above ground until November; but if permanent success is wished for, *i.e.*, if bulbs are expected to establish themselves and to flower well year after year, then by all means dig and replant or plant in July or August at the very latest. Many people have failed to induce bulbs to naturalise themselves on the Grass or in the wild garden, and have laid the blame on soil and climate, or the struggle for existence in Grass, or on the nurseryman who supplied the bulbs, when the secret of failure consisted simply in this fatal mistake of late planting. If "J. S. W." will plant his Daffodils in July next year instead of in November or December, I think he will not have to complain of their "running to Grass" after the first year's blossoming. Here on a light, rich, sandy soil, peculiarly well suited to the luxuriance of Narcissi, I find July planting necessary to full and vigorous perfection, and this must be doubly essential to success where soil or climate are inimical to their free and floriferous development year after year. To all who fail in the culture of Narcissi my advice is, plant in July. F. W. B.

CARNATIONS AND PICOTEEES.

WHETHER Mr. Glenny actually invented or not the unnatural models, such as that of the Picotee given at p. 89, I am not concerned to know. That their sponsorship rests with him, however, is notorious, while the revolt of florists against them is mere matter of history. I am therefore strictly accurate in saying that absurdities like these Picotee models have been repudiated by florists from the outset. As to "Hardy Florists' Flowers," to which "S. W." refers, its author, Mr. Douglas, is a famous grower and exhibitor of florists' flowers, and his little book is a very helpful guide to those who wish to succeed in their cultivation. It contains inaccuracies, however, as to the properties of some of the flowers treated of. Of the Carnation and Picotee, the immediate subject of this discussion, no figures are given. Those of the "perfect Auricula truss" and "model Tulip" to which "S. W." alludes, though not nearly so intolerably formal in appearance as the odious figure of the Picotee shown at p. 89, are undoubtedly formal and, in addition, untrue in several important particulars. These errors have been already pointed out by florists, and would certainly be corrected in any future edition of the book. Florists, however, have no more to do with the errors of the one writer than with those of the other.

If anyone wished to form an idea of what the florist's aims actually are, he could not do better than go to a Carnation and Picotee show, such as any of those we have had lately in both north and south. He would at once see that florists have fixed on a high, but perfectly natural, model for their guidance, seeking to improve breadth, substance, and refinement of petal, size of flower, natural form, and brilliancy of colour. He would see their success abundantly evidenced in such flowers as Robert Lord, Master Fred, Jas. Douglas, Henry Cannell, Thomas Williams, Clara Penson, Mrs. Payne, and hosts of others equally beautiful. These exquisite flowers differ from the ugly model of p. 89 as day from night. Were these Glenny Carnation and Picotee figures to be exhibited to

any eminent raiser of these flowers, it is an even chance at which he would laugh most, the precious models themselves, or the simplicity of anyone who could fancy he took them for his guidance.

M. R.

SANVITALIA PROCUMBENS FL.-PL.

If all annuals were of a similar nature to this one, the task of embellishing our gardens through the summer would be easy enough. Strange to say, although I remember to have seen this annual employed for bedding more than twenty years ago, it never seems to have become generally known; whereas its very exceptional merits should make for it a foremost place amongst summer flowering plants. The habit is dwarf, not exceeding 6 inches in height; it densely covers the ground with dark green foliage, each slender shoot terminating in a flower about the size of a sixpence, perfectly double, bright yellow with a black centre, and which to those who do not go to the extreme of fashion in rejecting all double flowers has an extremely neat and attractive appearance. There are three important points in connection with this *Sanvitalia* which constitute it one of the most desirable of garden flowers. In the first place, the individual blooms are of really extraordinary duration; indeed, with the exception of the *Everlastings*, I know of no flower that lasts so long in perfection. Their persistency will be illustrated by the fact that the first ones which opened six weeks ago are but just faded, having lasted bright and fresh through more than a month of exceptional heat and drought. In average weather the flowers would last good quite six weeks. They are, however, equally indifferent to wind and rain; they "laugh at the whirlwind and defy the storm;" and after a dashing shower which would dim the beauty of many things, the appearance of the plants—cushions of verdure thickly studded with golden buttons—is quite charming. In the second place, the culture is remarkably simple. Either sow in a cool house or frame or in the open ground in the middle of April; by the former method the blooming season is of course accelerated, as sturdy little plants are in readiness to set out by the middle of May. But the last and most noticeable points about this *Sanvitalia* is the way in which it goes on blooming through the summer and autumn. I should like to know how long it remains in flower in its native land, but our growing season is evidently not long enough for it, and I verily believe that if our summer were nine months long, *Sanvitalia procumbens* would be in flower the whole time. Its mode of growth is peculiar, and for an annual I think unique. The first set of shoots spread over the surface of the ground, and then from the base of them, and quite close to the old stem, issue a crowd of young ones, and thus as it were renewing its youthful vigour. It is just as if a mass of young seedlings were springing from the centre of a perfectly developed specimen. This progressive shoot development goes on through the season, so that it will easily be understood that flowers in quantity are continually being produced. If by any chance this plant could be induced to break into new forms, what a valuable one it would be. As it is I would advise all who have not grown it to do so. But I would just remark that a fairly rich soil is necessary and a sunny situation indispensable. It does no good in semi-shade, running much to leaf and becomes far from ornamental. Give it sun, moisture at the roots, and a fair share of food, and you will say that I have not written one line too much in its favour. There is a single-flowered kind, and, dare I say so in this age of single flowers, it is inferior to that which forms the subject of these remarks.

J. C.

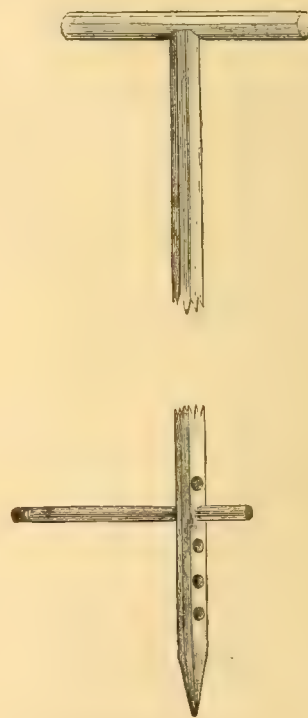
Tropæolum cœruleum roseum.—

Amongst the many flowers of this class on trial in Messrs. Wheeler's grounds, at Tuffley, near Gloucester, this is, in my opinion, the best and prettiest. Although growing in a large mass, every plant was of uniform height and beautifully clothed with perfect masses of blooms of the mo

lovely blush rose colour. Hitherto we have approved of confining this class of flowers to mixed borders, but we have booked this one for future use in the flower garden.—M.

BULB-PLANTING TOOL.

I SEND you a tool which I have designed for bulb planting, and which I find very useful. In carrying out experiments on bulbous plants, I have found the depth at which the various kinds are planted to have a great influence on their after growth. With this tool the right depth is ensured, the cross stick being put through whichever of the holes is right for the bulbs then being planted. I have them of various diameters, from a size suitable for planting Lilies and other large bulbs down to one thin enough to suit very small ones. And while I am on the subject of bulbs, I would call the attention of those who care for that class of plants to the very great importance of surrounding bulbs with sand when planting. This advice is very frequently given, but not, I think, sufficiently insisted on. I have just been lifting various



Col. Wortley's bulb-planting tool.

patches of experimentally planted bulbs, and it would, I think, astonish many who may not have given the subject much consideration to know how quickly bulbs planted in sand increase in comparison with others not so planted. This has been with me the case not only with *Ixiolirions*, *Calochorti*, *Babianas*, *Ixias*, *Cyclobothras*, and other such bulbs more or less delicate, but also with *Scillas*, *Daffodils*, and such bulbs of the hardier kinds. The most noticeable increase in proportion has been in *Iris reticulata*, every bulb having done well, and many of them intending to throw up three spikes of bloom next spring, while a few have increased even beyond that. These were all single bulbs planted last autumn. I shall hope in the course of my experimental work to obtain knowledge that will be useful to some of your amateur readers.

H. STUART WORTLEY (Colonel).

Dahlias in the open ground.—Roots left in the ground through the winter threw up strongly in late spring, and have bloomed well. The winter was mild and the spring dry, which helped them, but a mulch would protect the roots in winter, and by this means Dahlias might be grown with but little trouble. At any rate, it is well to know that they will succeed in this way.—J. C. B.

KITCHEN GARDEN.

THE POTATO CROP.

THE Potato crop is undoubtedly a good one, but certainly not so heavy as that lifted last season, the quality, however, being much superior. On light lands in many counties and on heavy lands in Essex and Kent the crops, owing to dryness at the roots, are in several cases that have come under my observation disappointingly light. Fortunately, there is but little disease among them, and the crops consequently may yet be above the average. Where the haulm is yet green it is advisable to lift and store the crops at once, or otherwise there is the danger of protuberation or the formation of a second crop, this being useless and certain to spoil the first crop. On heavy land in this more moist district we find a considerable number of diseased tubers, several newer sorts being the worst affected. We planted two long rows with Cosmopolitan, and I am sorry to state the crop was scarcely worth lifting, as at least two-thirds of the tubers were diseased. Altogether I was much disappointed with this much vaunted variety, and it will not be grown here again. As "D." remarked on page 206, the variety is liable in rich garden soils to form long and large tubers, and in some cases to be forced up near the surface. This renders it peculiarly liable to disease, and, besides, these long tubers are little better than monstrosities. Cosmopolitan much resembles Woodstock Kidney, which, if I remember rightly, was one of its parents, and for my part I fail to see any improvement effected. We are getting far too many so-called novelties in Potatoes, and were there no prizes offered for Potatoes three parts of the varieties of recent introduction would soon be discarded. Welford Park is another doubtful gain, but as this was grown for the first time this season we may give it another trial. This also was, for the season, badly diseased, and must be of weak constitution. Reading Russet is now grown by all classes, and probably no variety has won more prizes, whether in the classes for professional gardeners, amateurs, or cottagers. With us it is robust, but not wide-spreading in growth, crops heavily, and the handsome round rough-skinned tubers are very good in quality. Can anyone recommend a white round as a companion for it? I am frequently asked to recommend a good white round, but can only name Sutton's Early Border and Schoolmaster. The former is particularly good, as it is early, forms but little haulm, yet crops heavily, and the quality is good. Schoolmaster all are acquainted with, but it is by no means generally good. It is much liable to become scarred, and on strong soils the tubers frequently assume extraordinary shapes. Sutton's Fillbasket is a useful round white sort, but we have to dig over a good breadth to find a really good dish. It may be classed as a useful sort, more especially for the non-exhibitor. Lady Truscott we grew this season with Scotch Champion and Magnum Bonum, but I consider it a failure, and it will never prove serviceable here. On light land it crops heavily, and fairly handsome tubers may be selected from them. Harlequin we were in hopes would prove a handsome and useful sort, but we cannot get it large enough to please the judges. From a good stock of the old Lapstone Kidney several so-called new sorts might easily be selected without the judges being able to disqualify the exhibitor. So much for the good work supposed to be done by the National Potato Society.

W. I. M.

Asparagus as an ornamental plant.

—Apart from the edible qualities of the garden Asparagus, it is one of the handsomest of fine foliage plants, but the same inconsistency that banishes fruit trees from ornamental grounds decrees that the only place for Asparagus is in the kitchen garden, but beauty of form cannot be hidden, and year after year the Asparagus beds are the greatest of summer ornaments to the kitchen gardens; and this year in particular, while

the Peas were dried up and rusty looking, and nearly all crops were flagging and presenting a woe-begone aspect owing to heat and drought, the Asparagus revelled in the sunshine with plumes of verdant green that are not equalled by many plants grown under glass solely for their foliage, and as a plant for cutting sprays for garnishing it is most useful, and now that its berries are assuming a bright coral hint, how it helps to take off the stiff formality of floral decorations. In harvest festival decorations it is most appropriate, and if we can only forget its culinary associations we may yet find it coming to the front for general use as a decorative foliage and garnishing plant of the highest rank. Other kinds of Asparagus are ranked amongst the new and rare plants of our stoves, but then they have not transgressed the orthodox laws that decree a plant or tree that is useful on account of its yielding food cannot at the same time be included among the ornamental. We have seen many changes of late, and hope to see more.—JAMES GROOM, *Gosport, Hants.*

ORIGIN OF THE BROCCOLI.

AUTHORITIES say the Cauliflower and Broccoli are only varieties of the same species, but the habit and appearance of the two indicate a decided difference, that should always be kept in view in raising new varieties. First, the true Broccoli is quite hardy, or nearly so, and the Cauliflower is not; and, secondly, the Cauliflower has usually a plain and entire dark green leaf, while the leaf of the Broccoli is bluish green, and in shape like that of the common Green or the Turnip—that is, divided or notched and sometimes slightly curled—and the more distinctly these features are developed, the harder is the variety. Carter's Champion, Eclipse, and Backhouse's White are all true Broccolis, and they are three of the truest and hardiest. Grange's Early Broccoli, about sixty years in cultivation, perishes with the earliest frosts, and it is a Cauliflower in appearance and habit. Goschen's Late White appears to be a cross between the two, and is only half hardy, and it will be found that the rule holds good throughout. No Broccoli with a Cauliflower leaf or a tendency towards the Cauliflower habit can be trusted to stand frost, and a Broccoli that is not hardy is worthless. The Cauliflower and the Broccoli have in some instances been blended, so that in some varieties you cannot call them either the one or the other, but the two extreme types are distinct enough, and cannot be mistaken. The desire to have fine white heads of the quality of the Cauliflower has induced raisers to interbreed with the Cauliflower, but it is going in the wrong direction, so far as hardness—the main point—is concerned. All the authorities loosely agree in describing the Cauliflower and Broccoli as varieties of *Brassica oleracea botrytis*, whatever the original type of that may be like, but I am convinced that the blood of some other Cabbage has been introduced into either the one or the other. The characteristics of both are too distinct and too permanent to leave any doubt on that point, I think, but it would be interesting to learn more on the subject.

J. S. W.

Winter Spinach.—The long protracted drought will in many parts of the country cause a scarcity of green vegetables, and anything that can be grown on rapidly during autumn will be found useful. Very few crops become fit for use in such a short time as Spinach, and I would advise all who have any ground vacant to lose no time in getting it sown with that esculent. I have on many occasions found it an invaluable aid to the vegetable supply in seasons like the present. Sow the Prickly-seeded winter Spinach and thin it out in the usual way, but sow at the same time, or, if possible, a week earlier, a good breadth of the Round-seeded summer Spinach moderately thick; this will come on rapidly, and will yield abundance of succulent leaves during autumn and the early part of winter. When no longer needed, what is left can be dug into the ground. Spinach is a crop that leaves the ground in good heart,

and there is very little labour or expense attending its culture. Sow in drills, 1 foot apart, moderately thick.—J. GROOM, *Gosport.*

A new Tomato.—On the walls principally devoted to the formation of standard Peach and Nectarine trees in Mr. R. Veitch's nurseries at Exeter a grand crop of Tomato King Humbert is now ripening off. This variety is of Continental origin, and appears to be very vigorous and fruitful. The fruits are egg-shaped and rather small, but the colour and quality is good, and it may prove valuable for out-door culture. It is true Tomatoes generally are doing well this season, but I have seen none carrying such good crops as the variety under notice.—W. I.

ROSE GARDEN.

THE WEATHER AND THE ROSES.

THE heat and the drought proved almost too much for most of the Roses. It shortened the flowering season to the narrowest limits, lowered the quality of individual blooms, and even diminished the fulness of their fragrance. From 80° to 90° in the shade is twenty or more degrees too high for the perfect well-being and well-doing of Roses. But at last the coolness and the moisture have come, though probably a full month or more too late to push forward a good autumnal harvest of blossom, or mature the growing wood. So far the Tea Roses have had the best of it this season, and our autumn feast of blossom promises to be provided for us by the same most useful and accommodating family. At the present moment our Rose harvest is mostly furnished by the Teas, a few Perpetuals, and that never failing late Rose, Bourbon, Souvenir de la Malmaison. This last is, perhaps, the very best of all autumnal blooming Roses. Its chief fault is that it blooms in such large bunches that one can hardly obtain a sufficiency of stems for vases without sacrificing a host of buds. But of course this only applies to the use of the Rose for cutting. On the plants few sights are more pleasing than the huge trusses of this fine Rose in all stages from mere buds to expanded blooms. Even the latter unfold into good form in the autumn; though almost flat as a pancake, they are by no means the commonplace, unshapely, semi-colourless things that the same Rose produces in the spring or summer. The shades of pink in this fine Rose at this late autumn season are in themselves quite a study, as full of interest as of pleasure. To give some idea of the marvellous richness and variety of these it may be stated that they touch President at one end of the scale, and Devoniensis, or even Baroness Rothschild, at the other. The quarter or half opened buds are also models of form as well as of delicacy and chasteness of colouring; hence there is hardly any Rose, with the single exception of Niphetos, more in demand for vases and bouquets in the autumn than Souvenir de la Malmaison. True, it is somewhat deficient in fragrance, but it seems to me that even this improves with the shortening days. Neither can all that has been said in disparagement of the scent of this Rose be justified by facts. It has been compared to slops or fetid water. This is certainly an odious comparison, though it must be admitted the odour, like some of its other qualities, for example that of its distorted form in summer, is unique, unpleasant to many, and not very attractive to any. *Per contra*, its delicacy of colour is most pleasing, and hardly any Rose can match it in the rich profusion of its autumnal yield of blossom. It is also one of the easiest Roses to propagate and grow. It does equally well almost in soils of the most diverse character; in open beds or borders, or on walls of different aspects. In hot, dry weather, however, perhaps the finest blooms are gathered in the early autumn, either from plants in the open bed or border, or from those on east or north walls. Next to this Rose, or even before it in point of quantity of bloom and fragrance in the autumn, must be placed Gloire de Dijon. No Rose flowers more freely or early in the spring or summer, unless it be Maréchal Niel

where it stands the winter in the open and remains in robust health. It well deserves the character it has acquired by many gardeners as the ever-blooming Rose. But to have in full beauty in the autumn it is a good plan to grow it on walls; allow the summer made shoots to grow freely, and neither stop nor train them. Some of these will on strong plants extend to a length of one, two, or even three yards. They will naturally droop somewhat from their great length and consequent weight. And this drooping is one of the secrets of successful blooming, inasmuch as it helps the shoots to break more regularly from base to summit, and each break results in a bloom or a cluster of blooms. In situations exposed to high winds it is desirable to ensure their safety by tacking them on to the wall or fence to prevent their being broken. In such cases it is good practice to bend these autumnal flowering shoots down rather than train them into form or extend the Rose tree. They may, in fact, be treated as temporary blooming shoots only, and be removed as soon as the blooming season is over. The amount of bloom yielded by Rose shoots treated thus must be seen to be appreciated. This fine old Rose is also richer and more varied in colour in the autumn months than at any other season. It passes through almost every shade of yellow and orange, and deepens into salmon. The half and even three-quarter or fully-opened blooms are also more perfect in shape than at any other season. But the merits of this popular Rose are so well known, that it is hardly needful to dwell more upon them, though it is well-nigh impossible to recite, far less exhaust, all its merits. As an autumnal bloomer sure to yield an abundance of flowers it may safely be trusted to run abreast, if not ahead, of *Souvenir de la Malmaison*. A good third to match these two may be found in *Boule de Neige*. Possibly this selection may surprise not a few rosarians; but it is amply justified by experience. This is by no means a strong grower, but then it invariably makes a second growth and every shoot is crowned in the autumn with one or more blooms, for this beautiful white Rose mostly blooms in trusses of three or more—that is, one fully expanded flower supported by buds on either side; and flowers and buds alike are exquisitely perfect in form and without spot or blemish in its spotless whiteness. The fragrance of this Rose can hardly be matched—assuredly not exceeded—in the whole family. Perhaps the nearest approach to it in merit, though the odours are widely different, is that of a half-opened *Devoniensis*.

D. T. FISH.

STRIKING ROSE CUTTINGS.

ROOTING ROSE LEAVES may not be a very useful occupation, as obviously budding, grafting, and striking cuttings will afford quicker results, but it has its useful side in showing the conditions under which cuttings may be quickly and finely rooted. For instance, in experimenting with cuttings of various degrees of ripeness in different composts, positions, and temperatures, it was found that where leaves rooted, or rather leaf-stalks, at their bases, the wood of all degrees of hardness had formed a bulky callus and long fleshy roots in the shortest time. The lesson appears to be that there are many little matters capable of causing failure in striking the finer Roses for pot work, whilst there are also certain conditions which if set up will carry on this interesting operation at high pressure speed. The example sent to you herewith was rooted with other leaves and a batch of its own kind of cuttings, viz., *Maréchal Niel* in four to five weeks, in a frame kept close; the glass was smeared with whitewash; aspect of frame, east. A bed of half rotten stable litter doubtless gave off ammonia in a helpful manner; the cuttings were close up to the glass and pricked into damaged 18-inch pots, about a third shortened. To afford warmth throughout the compost, a shallow pot was inverted over the large hole, and the whole stood as on three legs of other three pots inverted on the manure bed, so that the warmth could get under and into the middle of the compost. The latter I found to be most effective when composed

of half decayed Cocoa-nut fibre and the other half of clean sand with a dash of wood ashes. This compost does not hold too much moisture, and keeps warm through the night. Not only is the wood about midsummer in the best state, I consider, for rooting, but the long warm days of that season work overtime for us compared with autumn operations. To sustain the leaves in a plump and fresh state, which should be aimed at, dewings in hot weather will be found ample where the frame is kept close. The amateur is especially fond of trying his hand at striking Roses and Carnations, but many fail completely, and chiefly perhaps from one or two causes, viz., those of using a dull knife and giving too much water. He cannot too early learn that the cuts intended to go into the

present it bears bright yellow axillary flowers almost as large as those of the common garden Pea, and these add to the ornate character of the plant.—F. W. B.

GARDEN FLORA.

PLATE 457.

MILTONIA-FLOWERED ODONTOGLOSSUMS.
(WITH A PLATE OF ODONTOGLOSSUM ROEZLI
AND O. ROEZLI ALBUM.*)

OUR friend M. Roezl is, undoubtedly, the best known collector of our day (just as Fortune and the brothers Thomas and William Lobb were to



Odontoglossum Phalenopsis.

moist soil should be left clean and firm all round, and that until Nature heals and furnishes the base of the future plant with feeders, it cannot grow, and consequently does not require water like a perfect plant, but only to be sustained until roots are made and got into action.

Woodville, Kirkstall, Yorks.

J. WOOD.

Amicia Zygomeris.—This a curious Pea-flowered shrub not often seen in gardens generally, but well worth a place amongst sub-tropical plants. It grows 5 feet or 6 feet in height when well established, and is easily recognised by its large purple-tinted stipules, which hang down like elephant's ears at the base of the petiole. We find it quite hardy planted at the foot of a warm south wall, but even in the open ground a little mound of sand or coal ashes is sufficient to preserve its root-stock from injury. During warm seasons like the

horticulturists of the last generation), and that his name should be commemorated by a species of *Odontoglossum* so distinct and beautiful as that we now figure is a source of much pleasure to all of us who know and esteem collector Roezl by his life's work so ably devoted to the enriching of European gardens. *Odontoglossum Roezli* has before been honoured with a portrait in *THE GARDEN*, but the variety in that case was *O. Roezli atro-purpureum*.

Our present plate shows both the typical purple-blotched species and its albino or white-flowered form. *O. Roezli* belongs to a very distinct section of the genus, which we may here call the *Miltonia-*

* Drawn in Mr. J. Bonny's Orchid nursery, 88, Downs Park Road, Hackney, May 20.



flowered group, all being characterised by thin glaucous leaves, rather narrow thin pseudo-bulbs, and flowers which, while strikingly beautiful, are peculiarly flat and *Miltonia*-like in general form. The species of this section are—*O. Phalaenopsis*, from Ocaña or Ecuador; *O. Roezli*, from Columbia; *O. Warscewiczii*, from Costa Rica; and *O. vexillarium*, from New Granada.

O. PHALAENOPSIS is, when well grown, a very pretty plant, but its culture has as yet not been generally mastered, and it is but seldom that the plant luxuriates in modern collections. It was introduced by M. Schlum in 1850, but it was rarely if ever seen in perfection of health and vigour until the late Mr. Thomas Hubbersty took it in hand at Bridge Hall, near Bury, ten or twelve years ago, and used to exhibit masses of it beautiful alike in flower and leafage. Mr. Ward, when gardener at Leyton, also succeeded well with this species. Mr. Hubbersty told me himself that the plant required but little peat, and that of the best, but that it luxuriated in Sphagnum Moss and charcoal. He was also of opinion that it required an equable temperature, and so grew it in pans suspended near to the glass in the *Cattleya* house in winter, but in a cooler house during the hot summer months; 50° was his lowest minimum temperature, and his practice was to shade from hot sunshine and to syringe the plants freely when growing morning and evening. Some of his specimens bore sixty or seventy flowers, and were, of course, much admired. It has two or three-flowered spikes, the flowers being nearly as large as those of *Miltonia spectabilis*, but pure white, the large fiddle-shaped lip being blotched with rosy lilac.

O. ROEZLI is so well illustrated in the plate, that there is no necessity to describe its form and colouring, and its culture is far easier than is that of the last named. All these *Miltonia*-blossomed *Odontoglossa* are liable to be injured by thrips, for which the best remedy is frequent syringings and an occasional bath in a solution of soft soap and soot, which should always be kept in readiness wherever these Orchids are grown. When grown in quantity from imported plants considerable variety is evident, but nothing can well be prettier than is the pure white form. The flowers of *O. Roezli* have a most delicate odour of wild Roses and honey, which is remarkable, seeing how seldom species of this genus are really fragrant.

O. WARSCEWICZII.—This plant has never been very plentiful in our collections; indeed, I never saw it in bloom in Europe, except in Mr. Day's collection at Tottenham. It was found originally by the veteran botanist whose name it bears on the Cordillera de Chirique some thirty years or more ago. It resembles *O. vexillarium* in habit, but the flowers are the size of those of *O. Phalaenopsis*, creamy white, suffused with lilac, and sometimes streaked with pale rose. It is figured in the *Botanical Magazine*, t. 6163, and is well worth a place in general collections, although not nearly so showy as the last named species or *O. vexillarium*.

O. VEXILLARIUM is perhaps the most showy of all the species of this section, its great flat flowers ranging from nearly pure white, through all shades of the most delicate rose and peach tints, until a deep and glowing rose colour is reached, verging on crimson. It is a vigorous-habited plant also, and most floriferous under good treatment, making stout growths in a cool house during the summer or autumn months, but doing best in an intermediate

or *Cattleya* house during the winter. Yellow thrips love to prey on its succulent young foliage, and their ardour is best checked by the bitter soap bath before recommended in the case of *Roezli's* *Odontoglossa*. *O. vexillarium* is, in fact, a professional beauty now pretty well known, and its portrait has been painted a dozen times at least, and may be found in nearly all the fashion books devoted to garden botany. F. W. B.

RECENT PLANT PORTRAITS.

PHILODENDRON SELLOUM (*Botanical Magazine*, plate 6773).—A fine double plate of a huge Brazilian Aroid with immense spathes, the outside of which is a deep green, the inside straw colour, with a thick spadix of the same light colour. This plant was first flowered in this country by Mr. W. H. Tillett, of Norwich, in 1873, and again in the present year, when specimens were sent to Kew from which the present portrait was drawn.

CEREUS PAUCISPINUS (*Botanical Magazine*, plate 6774).—A handsome Cactus with large deep orange-coloured blooms, with a paler centre or throat, and a conspicuous bunch of about ten stout green stigmas protruding from the pillar in the centre of the flower. It is a native of New Mexico, and was sent to Kew by Mr. E. G. Loder, where it bloomed in May of the present year.

IRIS (XIPHION) TINGITANA (*Botanical Magazine*, plate 6775).—A beautiful Iris from Morocco, sent to Kew by Professor Michael Foster, of Cambridge. It is of handsome, tall habit of growth, with large flowers composed of purple-lilac, upright filaments, a pure white lip and golden centre, and a purple tube. The variety already figured on plate 5981 of this work, under the name of *Xiphion tingitanum*, is a form of *X. filifolium* from Tangiers, which is now named *X. intermedium*.

PENTAPTERYGIIUM SERPENS (*Botanical Magazine*, plate 6777).—A bright flowered species of Indian Whortleberry from the Eastern Himalayas, with deep orange-coloured, pendulous, tubular flowers produced freely all along the ends of the branches. It is also found in the humid forests of Sikkim and Bhotan, and has been described by other botanists under the synonyms of *Vaccinium serpens* and *Thibaudia myrtifolia*. It is conspicuous for its great tuberous rootstock, which is sometimes 2 feet long and several inches in diameter, nestling among the Mosses of the limbs of large forest trees, whence the branches hang and flower in the month of May.

PRUNOPSIS TRILOBA and *PRUNUS PISSARDI* (*Revue Horticole* for September 1).—This plate figures for the first time the fruit of the above named two handsome Plums, the former of which has been hitherto known under the name of *Amygdalopsis Lindleyi* or *Prunus triloba*, but for which M. André thinks *Prunopsis* a better name. It is an exceedingly shy setter in this country at all events, and produces small, round, Apple-like fruit of a reddish orange hue. The fruit of *Prunus Pissardi* resembles a handsome Cherry in size and colour, and sets its fruit quite freely. W. E. G.

Great Knotweeds.—Planted in good deep well manured soil on the Grass, there are but few plants that can rival *Polygonum Sieboldi* and *P. sachalinense* in grace at the present time. Perchance the late hot season has helped their growth and bloom, for of a surety I never before saw them so well flowered as at the present time. The last named species throws up its leafy shoots to a height of from 8 feet to 10 feet, and to see these swaying in the breeze on a warm September day is a new sensation in store for those who have not seen the plant in its full beauty. *P. Sieboldi* is a smaller-leaved species, which also makes quite a pretty specimen plant on the Grass. I advise those who do not know the ways of these wayward Japanese plants to keep them on the turf; on a

border or in a shrubbery they soon grow out of all bounds.—F. W. B.

SEASONABLE WORK.

FLOWER GARDEN.

CARNATIONS AND FICOTEEES.—Now the layers will be strong, and, if necessary, may be potted up. We generally begin to pot about the last week in September, and for this purpose it is now necessary to prepare soil and have pots in readiness. Dirty pots must be washed clean and laid up in a dry place till wanted. New pots should be soaked in clean water for a few hours before using them, but they must of course be allowed to become dry after soaking. We mix good moderately clayey loam, out of which wireworm has been picked several times, with a fourth part of leaf-mould and a very little rotten stable manure. The layer should be separated carefully from the parent plant. First the peg holding it in the ground must be removed, then gently lift it with a stout label, and if it is well rooted sever it from the parent with a sharp knife. If roots are not formed or are only commencing to do so, peg the layer back again in its place. When potted, two plants in a 3-inch pot or one in a pot of smaller size will be sufficient; they should be placed in a cold frame, watered with a fine rosed watering-pot, and the lights should be kept rather close until the plants have become fairly established.

GLADIOLI.—The flowering period in the case of these is nearly over, except in that of a few of the very latest varieties. Shakespeare is invariably the first to open its blossoms, and *Phœbus* is nearly always the last. Plant roots of them together, and you may be sure of a lapse of at least six weeks between the flowering of the two. We are now saving seeds from all that have been hybridised, and in relation to this may be noticed a curious circumstance. Adolphe Brogniart had its own pollen removed and was crossed with a variety that had plenty of it, but not a pod formed, while one spike left to itself was loaded with seed-pods. Nearly all the other hybridised varieties have plenty of good seeds now ripening well. The pods are gathered as soon as they show signs of splitting open. The young seedlings from seeds sown in the spring die down at this time, and those that have lost their leaves must be shaken out of the pots, otherwise they immediately start into growth. Put the small corms into paper bags with about their bulk of dry sand or loam mixed with them; they must be kept in a dry room secure from frost. Stir the ground between the rows of the general collection with a hoe, or lightly fork it over.

HOLLYHOCKS.—Pay attention to young plants struck from eyes or cuttings during the last month or two; as roots are formed and they become established place them in a cool position out of doors. If there is any red spider on the leaves, dip them in a solution of soft soap and flowers of sulphur. Thrips may be destroyed in the same way. During the spell of dry weather recently it had been necessary to apply water to the roots of all plants coming into flower, and also to syringe the undersides of the leaves. It seems that the stamping-out process is the only effectual way of getting rid of the leaf fungus (*Puccinia malvacearum*), but sulphur and soft soap applied freely may arrest its progress if aided by moist cool weather. It is not perhaps so well known as it ought to be that seeds saved from some of the best named sorts will produce 50 per cent. of plants differing but little from the parents in quality and colour.

SHRUBBERIES.—The rearrangement, thinning out, or making of new plantations of shrubs may now be commenced as soon as circumstances permit, on light soil more especially. Autumn planting is preferable to spring because of the longer period there is for the plants to get established before there is any danger of drought affecting them; indeed, only when very heavy soils are concerned is it desirable to defer planting till early spring. From the middle of Septem-

ber to the end of November may be said to be the best shrub and tree planting season of the whole year. Deep trenching is the first essential, and manure in proportion to the requirements of the soil. Light sandy or gravelly soils should be given all the stable manure that can be afforded; indifferent peaty soils the same manure or else plenty of decayed leaves, but good loam and peat need no other preparation than to be broken up deeply and to be freed from all perennial weeds, such as Couch, Nettles, and Docks. The margins or borders of shrubberies where no alterations are contemplated, after being cleared up, may be planted with spring flowers, such as Forget-me-nots, Silenes, Primroses, Violas, bulbs, &c., there usually being plenty of such plants to spare after due provision has been made for the regular flower beds and borders.

ROCKERY AND SUB-TROPICAL GARDEN.—Weeding and cutting away dead flower-stems and fronds, keeping paths free from weeds, and taking cuttings of such rockwork plants as it is desired to increase are operations that require attention. Amongst sub-tropical plants, tying to supports is the most important need. Castor-oils, Hems, Blue Gums, and similar tall growers, now when they are so large, quickly snap off with but little wind or wet unless tied up as growth advances. Keep edgings neatly cut and the undergrowth plants stopped back before they enroach on or mar the effect of the larger plants. Single Dahlias seem to be appropriate plants for intermixing with some kinds of non-flowering sub-tropicals; they associate extremely well with the Castor-oils and white-foliaged Solanums. Note should be made of this fact and of other striking arrangements for next season's use.

HARDY PLANTS.—Amongst these we must class Antirrhinums, Phloxes, Pentstemons, Pyrethrums, Delphiniums, &c. All these may be divided now and planted out before winter. If not done at this time, so that the wounds may heal, it will not do to divide them at all until the spring. Those that are propagated by cuttings may be done now if a large supply is wanted, but it is time enough to put in Pentstemons in October. They do well under hand-glasses. Phloxes may be propagated from cuttings as they can be obtained.

INDOOR PLANTS.

STOVE PLANTS.—All that have been for a time in greenhouses or conservatories should be no longer allowed to remain there; this applies to both flowering and fine-foliaged kinds, for, although there is no better way of giving the short rest such plants require, it will not answer to allow them to remain until the nights get too cold, otherwise they will be apt to suffer at the roots as well as in the foliage. It is not well to place plants that have for a time been in cool quarters in strong heat, especially if there is much moisture in the atmosphere, otherwise it will excite them into active growth, which is not now advisable. Any that happen to be affected with the worst kinds of insects should be well washed with insecticide, as now when the leaves are hardened up and little tender growth present they will bear a stronger application than at any other time of the year. Those who have the small, white-flowered *Dipladenia boliviensis* will find it one of the best flowers for bouquet-making or use in shallow stands; if the flowers are cut when young they will last for a week in water. For the production of cut flowers it is a most useful plant; it is best grown close to the roof, as in such a position the blooms have more substance in them, and will last better in a cut state. Where such kinds of plants as usually find a place outdoors during the summer months are largely grown, no time should be lost in getting the houses and pits wherein they are to be wintered prepared for them.

OVER-CROWDING is the bane of good gardening, and more especially with pot plants. With the addition of new plants, and the yearly propagation of others, combined with the increase in size of all, there is a continual tendency towards

glass structures getting fuller than is consistent with the healthy existence of the whole. To avoid this it is much better at this season to go carefully over the whole stock, and without hesitation to discard such as are of least value and use. By this course not only will the supply of flowers during winter and spring be more plentiful, but the plants retained will be immeasurably better than where by attempting too much the object in view is defeated. The advent of frosty nights often comes on with little warning, necessitating tender plants that have been in the open air being hurried indoors, and if such work as above suggested is at once completed, much labour and confusion is avoided. Where there are several houses and pits to be thus filled, care should be taken that the best and lightest places are given to all such as naturally make more or less growth through the winter. This applies to both hard and soft-wooded things, for although amongst such of the former as make a little shoot extension in the winter months the growth will not be so much as to cause so great mischief as in the freer growing soft-wooded kinds, still the injury in their case is more lasting. Camellias, Azaleas, and others of like nature, that make no leaf progress until after the turn of the days, will bear standing closer than many varieties of Heath or such others of the hard-wooded family as keep moving more or less. Pelargoniums above all others must have enough room, and require the best light position that is at command.

KALOSANTHES, again, should be alike favourably dealt with, keeping them as close to the roof glass as possible; upon this depends the successful flowering of several of the less free-blooming sorts, such as the old *K. coccinea* and some of the finer new Continental varieties, which, in addition to full exposure to the sun in the open air during summer, require all the light that can be given them in winter. In houses or pits that from their position are constructed to afford insufficient light to the inmates, and where there is an absence of permanent staging, such as to sufficiently elevate the plants to the roof, improvised shelves or stages may often with advantage be used. The condition in the spring of all plants that make any growth in winter when so accommodated will be found very different from that of those less favourably situated.

VERONICAS AND SALVIAS.—Where these have been planted out for the summer, with a view to their being taken up and potted, it is well to have all the necessary materials in the shape of soil and pots ready, and to make a beginning to so transfer them, for in all cases they will be much benefited by being stood in pits or frames for a few days, where, by putting on the lights and keeping them shut up, they will begin to root, and will then suffer little or no loss of their leaves. With soft-wooded, vigorous-rooted things of this nature give plenty of water, so as to fully moisten the soil.

TREE CARNATIONS AND BERRIED SOLANUMS.—Those planted out for the summer may now be lifted and potted, as, with the Carnations in particular, it is not well to let them stand out until their growth, which for the last month will have been considerable, gets at all checked. These Carnations should on no account be potted in a like way to the generality of plants—that is by compressing the soil hard in the pots. If made near so solid as found beneficial to most things, they root very indifferently; they also require lighter soil than many plants—good fibrous loam, not too heavy, with the addition of a considerable amount of leaf-mould and some sand. Leaving it in a comparatively light condition about their roots usually results in their doing best if carefully taken up; placing them in no larger pots than will fairly admit their roots, lightly watered, and set in frames or anywhere where they can have a glass covering overhead in the case of heavy, continuous rains, will be best. Solanums must be well soaked immediately they are potted, and should be stood for a fortnight under a north wall or in pits or frames where they can be kept shut up somewhat close until they have got established, when there

will be no loss of their lower leaves, which if absent so much disfigures them.

BOUVARDIAS.—Young plants of these that were struck late in the spring and are now in cold frames or pits will this season be deficient in size through the absence of sun-heat. Where this is the case, they should be at once taken up and potted and placed where they will receive enough heat to keep up free growth until sufficiently large to yield a full crop of flowers. Early-struck stock that have attained enough size should be treated in accordance with the time they are required to flower. Such as are intended to bloom later on during the winter ought to be kept cool, but when the weather gets colder they must not remain in too low a temperature; otherwise they will flower indifferently. Old plants that were cut back in the spring, and may have been stood out in the open air, will now be well set with flowers, and should not be allowed to stop out after the nights are chilly.

CHRYSANTHEMUMS should now have sufficient stakes and ties put to them to support the shoots without giving a stiff, formal appearance. Willows with the bark on can with advantage be used for these and other plants that only want support for a limited time, as they cost less than ordinary painted deal sticks and look better. Chrysanthemums are setting their flowers generally earlier this season than they have done for the last year or two, and at this period of their growth must be liberally supplied with manure water, for as the soil in the pots will now be full of roots, any deficiency of sustenance will affect both the quantity and size of the flowers.

HERBACEOUS CALCEOLARIAS.—A second sowing of these may yet be made, but must not longer be deferred, or the seedlings will not become strong enough to get satisfactorily through the winter. Plants from this late sowing will give a successional crop of flowers after the earliest are over. As soon as the plants from the first sowing are large enough to be at all handled, they should be pricked off into shallow pans about 1½ inches apart. Young hands at the cultivation of these most effective flowers should be careful in all stages of their growth not to pot them in too heavy soil; good friable loam, with a fifth or sixth of leaf-mould and a good sprinkling of sand, with the soil not pressed so hard in the pots as most things require, is what they like. If material of this description is sifted and used for pricking them out, they can be removed from it at potting time without the loss of roots, which is unavoidable when heavy soil is employed.

ORCHIDS.—There is perhaps no season in the year more favourable than the next two or three weeks for interfering with the roots of cool Orchids, and any that need attention in this respect should be seen to at once, as there is nothing to fear after this date from hot weather. In dealing with *Masdevallias*, it is best to wash them clean out of the old material, and the plants may be split up into pieces with four or five leaves attached to each with perfect safety. These should then be replanted at equal distances over the surface of the pot or pan intended to receive them. In this way they quickly make large specimens, as when once they get root-hold, which they are not long in doing, they break away in all directions in the spring, and soon fill up the vacant places over the surface of the pot. The soil best suited for these is about equal parts of very fibry peat and Sphagnum Moss well blended together. The autumn-blooming *M. Davisii* and the winter-blooming *M. tovarensis* must not be disturbed at present. In dealing with the *Odontoglossums* much more discrimination will be required. These should not be disturbed unless the condition of the plants and the state of the material about their roots show that a change of pot is necessary. As these are generally to be found in all stages of growth in the same house, it will be advisable not to interfere with any that are making up their growths and that are fast approaching the flowering stage, as the check given by repotting and the drain of the flowering shortly after may weaken the plants for several seasons. The soil

preferable for these is two parts fibry peat and one of Sphagnum Moss. A few of the warmer species of *Odontoglossums*, such as *O. Phalenopsis*, *O. citrosimum*, *O. vexillarium*, and *O. grande*, should now or shortly be removed to the intermediate house for the winter. Place them in the coolest end of the house, and in a position where the plants will be exposed to all the light possible. During dull weather maintain a buoyant atmosphere among the warm species by means of careful firing and ventilation.

KITCHEN GARDEN.

WE are now making preparations for our early Cabbage crop by heavily manuring the border this season occupied with Peas. It is our usual custom to sow Spinach after Peas, but we find this to be anything but a paying crop, and Cabbages early and good will pay. We find early Cabbage ground to be a good site for Brussels Sprouts, put in crow-bar fashion. We used to grow Brussels Sprouts as large as small Cabbages, but was told they had no flavour, a statement which first set us thinking that fresh manure was not the thing to use; hence ground after Cabbage gets nothing in the shape of manure. Young Cauliflowers should now be up and growing. Keep weeds down by hoeing between the rows, an operation which loosens the soil, and thus does the plants great service. Planting Lettuce, Endive, and earthing up Celery must have just now our best attention. Sowing Lettuce (Black-seeded Brown Cos) for a spring supply must be done at once. As traps for slugs we adopt the good old plan of laying handfuls of Pea haulm round the border or quarter to be planted; every second morning we visit these wisps and scatter fresh lime on the slugs, which kills all at once. The Celery quarter is treated in the same way. We shall be lifting *Magnum Bonum* Potatoes this week; add *Champions* to them, and your collection of late Potatoes for the present time is complete. Cut all herbs for drying, distilling, &c., and do not forget to have a general brush up every Saturday.

FRUIT.

PEACHES.—With the exception of late houses in which the fruit is now in use, the principal work in this department will be the re-arrangement of the trees for another year, and as this should always be performed as soon as the foliage is ripe and the flower-buds are well formed, advantage should be taken of dry days for mixing and moving the compost. In the formation of new borders, the quality of the soil is of more importance than the quantity, as it has been proved over and over again that a well drained border made of strong calcareous loam, in which stone fruit trees fruit freely, need not be so large as was at one time imagined, and that the best bearing wood and the finest crops of Peaches can be produced for a number of years where root space is limited and the latter are kept in a state of activity near the surface by means of good mulching and feeding during the season of growth. For early and succession houses they should always be made inside the house, as the roots can be kept warm and entirely under control; but for late use efficiently drained external borders answer equally well, and, being exposed to the elements and well mulched, they require very little attention beyond an occasional soaking with the hose in unusually dry seasons. In gardens from which a constant family supply of fruit is expected, a judicious selection of sorts for succeeding each other, particularly where the houses are large, is of the greatest importance, otherwise a glut will be followed by scarcity, as ripe Peaches cannot be kept for any length of time, and the attempt to retard by means of shading generally leads to the loss of colour and flavour. On good Peach soils, some twenty years ago it was the custom to plant the everlasting old friends, *Royal George*, *Noblesse*, *Grosse Mignonne*, *Chancellor*, *Late Admirable*, and perhaps *Barrington*, and as several of these come in together, and a thoughtful man would never think of destroying such sterling kinds, the cheapest and

best way to get them to succeed each other will be secured by dividing large houses into small ones, when some of the trees may be stripped and retarded up to the flowering period and again after the fruit is set.

CHERRIES.—The most important work here will be the maintenance of conditions favourable to complete rest of buds and roots, as far as roots can rest, until the weather becomes colder and there is no longer any danger of these excitable trees starting into premature growth. To succeed well the foliage should never be allowed to suffer from the ravages of spider or other insects. It should always have the benefit of summer rain and morning dew, and the roots should receive sufficient water prior to mulching after the fruit is gathered to prevent the leaves from ripening off prematurely. If any alterations are contemplated or fresh trees have to be introduced, no time should be lost in getting the work done, as Cherries, like all other stone fruit trees, succeed best when moved before the leaves fall. They also enjoy a firm resisting, calcareous loam thoroughly drained and well mulched with manure, but the manure should never be mixed with the soil, as it induces a strong unfruitful growth of wood, which is apt to grow and become unmanageable. If any of the pot trees remain to be top-dressed or potted, no time should be lost in getting them out of hand and placed thinly in a warm, sheltered corner fully exposed to the sun, where they may receive an occasional washing with the syringe, and remain until the time arrives for storing them away for the winter.

PLUMS.—Where the choice kinds of Plums, including the *Gages*, *Golden Drop*, *ickworth Impératrice*, and others, are permanently planted in borders, and trained under the roof as Peaches are trained, all the early and midseason kinds in pots should be removed to another house, as they are cleared of fruit if they want repotting, or to the open air, where top-dressing is all that is required. Having cleared the house of all damp-producing subjects, see that the internal borders are moist enough to prevent the trees from suffering from drought, otherwise the fruit will ripen prematurely and shrivel. Then mulch with some light non-conducting material, discontinue direct syringing, and keep the house cool, airy, and well ventilated. As birds, notably the blackbird, and wasps have a great liking for good Plums, and liberal ventilation is absolutely necessary, scrim canvas or Haythorn's netting should be drawn over all the openings before the fruit is ripe; but where wasps do not trouble the gardener, ordinary fishing nets will keep back our feathered friends. If any of the above late dessert kinds are fruiting in pots, the latter should be surrounded with dry Fern or litter to keep the roots moist and cool, and to reduce the necessity for frequent watering.

ORCHARD HOUSE.—The first batch of early forced trees that were potted immediately after the fruit was gathered will still be out of doors resting, and if they have not already lost their leaves they will shortly do so, when any little pruning or thinning that was overlooked when the leaves were upon them may be performed preparatory to placing them closer together until they are wanted for starting. The site selected for these trees should be high and dry, but well sheltered, and the pots should be placed upon, or, better still, plunged in coal ashes, as a sure means of protection from injury from extreme drought, frost, and worms. Midseason and late trees still bearing fruit or only recently cleared should be potted and taken back to the orchard house at once for the twofold purpose of hastening the ripening of the wood and the formation of new roots before the leaves fall. The season being now well advanced, watering will be less frequent; but the supply, whenever it is given, should be sufficiently heavy for every part of the ball to receive benefit, as Peaches at all times should have their roots in a moist growing compost thoroughly drained and aerated. If, as is sometimes the case, we have a very bright month of October, an occasional dash with the syringe will keep the leaves fresh until the roots begin to work in the new

soil, and when this takes place the dry enjoyable atmosphere of a well ventilated orchard house will be found the best medium for hardening the wood and ripening up the blossom buds. Where large established trees have been placed out-of-doors for the purpose of retarding the fruit they should be taken in again as soon as it is gathered. In fine autumns this removal to the open air produces a marvellous effect in the colour and flavour of the fruit, and the change being so rapid it becomes like highly finished wall fruit under good management. Lord Napier is another Nectarine that is greatly improved by full exposure to light and air, and, being naturally of a pale colour, the trees should be kept thin of wood and occupy the lightest as well as the most airy part of the house. Mixed houses should be cleared of Pears and Plums as the fruit is gathered to make more room for *Golden Drops* and the finest kinds of dessert Pears. Preparations should now be made for lifting and potting up the young trees that have been marked for succession. Nine-inch pots are large enough for ordinary maiden trees. These should be clean and well crocked with bones and charcoal, and the compost so often described should be ready before they are taken out of the ground.

PINES.—As the present month draws to a close the management of the plants for the winter should be complete. All the late summer fruiterers should be placed in a light, well heated and properly ventilated pit or house to finish off, and if not already done, late starters and others now throwing up should receive similar treatment. As many of this section will have to remain until after Christmas, they should not be placed too close together, neither should they be kept so cool as the more advanced plants. A bottom-heat of about 80° will keep the fruit swelling, and as this can be obtained from fermenting materials, we always make a point of clearing out the fruiting pit early in September, scalding and cleansing the walls and floor, and refilling with sound dry Oak leaves of last season's harvesting. Into these all the late starters are plunged, lightly at first until we ascertain that the bed is not likely to get too hot. The plants are kept well up to the glass; they are lightly syringed on all favourable occasions, heat and moisture being regulated by the state of the weather. This management gives another compartment for the first batch of Queens, and the next is filled with the spring-potted suckers now filling the fruiting pots with roots, but as these will make a spring growth before they start we keep them steadily progressing for some weeks longer. All shading on the hottest days may now be dispensed with, and if artificial heat can be obtained from the fires or the beds, the rapid growth of the present month should be kept firm and stocky by means of liberal ventilation. These plants should be carefully, but well watered with tepid liquid manure or guano water as often as may be considered necessary, and if any of them throw up young suckers, they should be taken out before they have time to check the growth.

FIGS.—We have removed the lights from the south side of our early pot Fig house, and the wood is now thoroughly ripe. They will remain undisturbed until after the leaves fall, when the old mulching and plunging material will be taken away preparatory to the annual washing with soap and water. All the old stakes will be replaced with new ones; the trees will then be washed with Gishurst compound, tied in, and left standing on the raised pedestals, as they are now too large for removal from the house. All the roots that have extended beyond the rims of the pots will be cut off, and they will remain without water until the time arrives for starting them in November. Meantime the lights and woodwork will be painted ready for placing over them should we have cold rain, or, as sometimes happens, severe autumn frosts. In succession houses the crop may be considered over, and the wood and foliage will soon be ripe. If the trees have grown too strong and a check is considered necessary, no time should be lost in getting them lifted and all the strong roots shortened back, when they may be replanted in

strong calcareous loam, to which one-fifth of old lime rubble has been added. This should be used in a dry state, thoroughly rammed and mulched, and left without water for the present. Where these trees have filled the allotted space, the young growths should be well thinned out so as to have room for extension next season without crowding the foliage. Trees in late houses and cases are now bearing abundantly, and the quality of the fruit is very good, but the wasps are devouring them as they change for ripening. Free ventilation being absolutely necessary, Haythorn's netting should be placed over all the openings and doorways.

CUCUMBERS.—Make another sowing of Telegraph for plants to succeed the latest Melons, and strike cuttings of shy seeding or favourite kinds. If inserted in small pots and plunged in bottom-heat under bell glasses they soon form roots, and being more wiry than seedlings, they come into bearing quicker, and very often go through a severe winter better. As the days are now rapidly decreasing in length and the nights are much colder, the syringe must be more cautiously used, and then sufficiently early for the leaves to get moderately dry before nightfall. Where plants in pits and frames are still producing sufficient for the demand, maiden plants intended for giving fruit at Christmas may be divested of young fruit and male blossoms, as a means of increasing their strength and getting the trellis well covered before the winter sets in, care being taken that they do not become too vigorous—quite as great an evil as having them too weak. Winter Cucumbers should have a light sound soil, rich enough to produce good growth without the aid of manure, as the latter encourages worms, and when they com-

mence bearing, light cropping and good feeding will produce satisfactory results. Where fermenting material is used for bottom heat, fire heat may still be dispensed with if a temperature of 68° by night with a rise of 10° by day can be secured, but it must be borne in mind that day ventilation is essential to the production of firm, short-jointed growths, and if this cannot be obtained in any other way, the pipes must be warmed through the early part of the day. Good dry soil for top-dressing and potting plays a very important part in winter culture, and in order to have this always ready, a supply should be got under cover before it gets chilled by autumn rains. For general use, long narrow stacks in the open air well elevated on a dry bottom, and protected with a little rough thatch, should now have attention as the turf is in excellent order for cutting and carting. It is also necessary to look well ahead where tan is used for bottom-heat; and in the event of a further supply being wanted for the late plants, it should be well worked under cover before it is taken into the pits, but if thoroughly sweetened Oak leaves are at hand, these, with a small proportion of horse manure for throwing off ammonia,

will form the best material for planting upon or plunging the pots in.

INDOOR GARDEN.

THE AFRICAN LILY.

AFTER a deal of correspondence that has taken place in THE GARDEN from time to time relative to the hardness or otherwise of the Agapanthus, I think we may safely assume that unless in very favoured spots a certain amount of protection is needed, at all events during severe winters, which protection is well repaid, for it would be difficult to find a more accommodating subject and one that makes such a fine display at this season of the year. The Agapanthus comes in very opportunely for conservatory decoration as well as in the open air, for many of the summer-flowering plants are past their best, and with the white as well as the older and better known blue variety of the African Lily, combined with the different

stands at a high price in nurserymen's catalogues) I have never been able to flower satisfactorily, as the blooms refuse to open; and in this experience at least I am not alone, as those among my friends who have tried it say the same. As regards its ornamental qualities, however, I consider it the poorest of all and not worth growing.

H. P.

FORCING THE SOLOMON'S SEAL.

WHAT among flowers, native or foreign, hardy or tender, can so much as approach the exquisite gracefulness and simple beauty of the Solomon's Seal, common as it is? What, again, can more forcibly remind us in the dreary days of mid-winter of the delights of the May garden than luxuriant potfuls of flowering Solomon's Seal? Charming as it is when seen peeping out from the fringe of a shrubbery in May time, it is ten times more charming in the dark days which seem to lend additional elegance to its tall arching stems and heighten the beauty of its tender green leafage and pearly drop-like blooms. No doubt it is the very commonness of the plant that makes us so indifferent to its charms. Were it a newly discovered plant from the South Sea Isles, would it not rank high in the estimation of the flower-loving public?

There is no need to speak here of the Solomon's Seal in the open air. Everybody knows it, and almost every garden possesses at least a tuft of it, but there is ample need of saying a good word for it as a plant to be forced into bloom early. No plant is easier forced or gives so much beauty for such little trouble. Those who wish to have flowering potfuls of it in the dead of midwinter must now see about lifting and potting some



A spray of Solomon's Seal.

forms of the old *Lilium speciosum*, we impart quite a distinct character to the floral display in the conservatory. For cut purposes, too, the blooms come in very useful, as the individual flowers can be used in the smaller arrangements, and they last a good time after separation from the plant. A great point in favour of the Agapanthus is the fact that it can be wintered almost anywhere, provided frost is excluded and the situation chosen not too damp. We keep ours in the winter in a frame where there is just a little heat during severe weather, and very little water is given at that time, though the pots and tubs are full of roots. In this way thorough rest is insured, and when growth commences in spring plenty of air is given whenever possible, and later on the plants are assisted with some manure water once a week. With this treatment they flower very freely, and as the pots are simply crammed full of roots, the manure water is quite necessary to bring so many blossoms to perfection. Besides the white and blue varieties of *A. umbellatus*, the smaller growing *A. minor* is also a pretty plant. The double-flowered variety of the common kind (which, by the way, still

plants of it, as the foliage has died away and the plant is comparatively inactive. Choose a strong tuft for lifting, and divide it so as parts of it will fit comfortably in a 6-inch or 8-inch pot, giving preference to those pieces of the creeping rootstock that are furnished with plump terminal buds, for it is from these that the stems will rise. After potting, the pots may be treated in much the same way as Dutch bulbs usually are, that is plunged in ashes to the rims until they are taken to warmer quarters. But being a hardy plant, the forcing must be gradual, and at no time must the heat be too great, otherwise long spindly shoots will be the result. In October, say, the plants may be plunged in bottom-heat, ranging in temperature from 55° to 60°. The plants will soon think it is May time, and will rapidly push up their stems, and when in full leaf and flower the plants will be all the better for being placed in a cooler and dryer atmosphere, so as to keep them in beauty as long as possible. Even if all the stems do not flower, the flowerless ones are useful for arranging with other flowers in vases. The tall stems laden with blooms have a charming effect placed in a tall vase by themselves or with some flower

that will harmonise with them. Of course by placing the plants in heat at intervals successive batches can be had in bloom up till the outdoor plants come in bloom. The forced plants may be planted out in the shrubbery and fresh roots taken up for forcing the following autumn. The common Solomon's Seal (*Polygonatum multiflorum*) is the kind usually forced, but any of the others of a similar stamp force equally well. Forced plants of the giant Solomon's Seal (*P. giganteum*), with stems from 6 feet to 9 feet high, would be a fine object in a conservatory in winter and early spring.

W. G.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 190.)

NOTHOCHLÆNA.—This genus, which comprises many beautiful Ferns, is closely related to Cheilanthes and Gymnogramma, genera which the *Nothochlænas* resemble in habit, as while some of the species have scaly, woolly, or entirely naked fronds, others have them more or less densely clothed with either white, creamy, pale or deep yellow coloured powder. In a Natal species the underside is wholly covered with a pinkish coloured meal, but unfortunately up to the present time this singular and beautiful species is only known through dried specimens. It is not even unusual to find on the same plant fronds the undersides of which are adorned with quite different colours. Some of the *Nothochlænas*, as has just been said, resemble in general appearance either *Gymnogrammas* or *Cheilanthes*. Others, with their ebony black shining slender stalks and small pinnules look so like some of the *Adiantums* that one often finds that when people inquire for gold and silver Maiden-hairs, although such things exist, they are generally alluding to *Nothochlæna chrysophylla* and *N. nivea*. The greatest part of the genus comes from South America, although there are also a few African, Indian, and Australian species, and even two or three of the prettiest kinds, such as *canariensis*, *Marantæ*, and *lanuginosa*, are natives of the south of Europe. North America also produces some eight or ten species, four of which have their fronds coated with either white or yellow powder; the others are scaly or woolly. An important fact to notice, and one helpful to the grower, is that from whatever part of the globe they come, all the species are invariably found on rocks much exposed to the sun, and where they get a good supply of moisture at the roots. The majority of them are of erect or semi-erect habit, although there are a few which are particularly well adapted for growing in baskets of small or medium dimensions, in which they make handsome plants and display their elegant fronds to advantage. In any case they should not be kept in a close or moist place; a situation somewhat airy is indispensable for all of them. If grown in pots a mixture of good fibrous peat and small pieces of sandstone in about equal proportions is all that is required, but great care must be taken to ensure perfect drainage, as stagnant water at the roots is highly injurious to all of them. Fine sifted soil should be carefully avoided, and the same may be said of syringings overhead.

N. CANARIENSIS.—This evergreen species is one of the few members of the genus that are natives of Europe, and it is one of the most interesting of the whole group, as it is so densely covered with long, reddish soft hairs, that it has quite a woolly appearance and looks as if the whole plant was covered with down, although in reality it is only the under surface which has that peculiarity; the upper side of its elegant arching fronds is of a dull green colour. It is a Fern of medium size only, and is found in a wild state in Tenerife and the Cape de Verd Islands.

Rhizome thick and fleshy, covered entirely with large silky scales of a light brown or reddish colour; these rhizomes keep well above the surface of the ground. Fronds produced abundantly, from 12 inches to 20 inches long, including the stalks on which they are borne; they are ovate-lanceolate in shape and bipinnate, with pinnules obtuse

and set close together; their underside as well as the stalks and rachis densely clothed with long reddish brown hairs, under which the sori, although very numerous and intensely black, are scarcely perceptible.

N. CANDIDA.—An exceedingly pretty North American species found in its natural state growing in crevices of rocks, often in places much exposed to the direct rays of the sun. It is found from Western Texas and New Mexico to California and southward to Peru. In general aspect it resembles some of the *Cheilanthes*, as the margin of its pinnules is slightly recurved, though it does not form a true involucre, such as is seen in the well-known *C. farinosa*, for instance, a Fern otherwise much like this species. In perfectly developed plants the fronds are deltoid-ovate, though their outline becomes almost regularly pentagonal in young specimens. Another very noticeable character peculiar to this species is the extension of the lowest pinna, which are much the broadest, from the fact that the basal pinnules on the lower side are much elongated and more compound than those on the upper side. Sometimes also several of the pinnules on the lower side are much longer than the corresponding ones on the upper. Although the fronds are generally pinnate only, it is not unusual to find the pinnae themselves pinnate, thus making the frond fairly bipinnate, but they are commonly pinnatifid into oblong or more or less rounded lobes. Their upper surface is dull green, but copiously sprinkled with minute stalked whitish glands. The sporangia are situated just within the margin, and are dark in brown colour. This species requires cool treatment.

Fronds deltoid-ovate in outline and pinnate, the leafy portion scarcely measuring 4 inches in height; they are borne on tufted viry black and shining stalks from 4 inches to 6 inches long, raising from a slightly creeping rootstock thickly covered with narrow, rigid, and nearly black scales. Pinnae lanceolate, from a broad base deep y pinnatifid; segments oblong, slightly curved, obtuse, minutely glandular above and covered beneath with white or yellowish ceraceous powder, except on the midribs, which are black and shining.

N. CHRYSOPHYLLA (flavens).—This very elegant evergreen South American species is one of the most popular and best known of the genus. It possesses many qualities, which render it attractive and of great value to all Fern growers. It is graceful in appearance, and the bright golden farinose power with which the under surface of its *Adiantum*-like fronds, which are produced in great abundance, is covered, forms a pleasing contrast with the jet black marginal sori and the slender black shining stalks on which they are borne. It does best in baskets, and should be kept close up to the light and in a warm house, at least during winter.

Fronds produced from a thick fleshy rhizome covered with dark brown scales; they are tripinnate and average about 12 inches in height; they are slender with the pinnae distant and spreading. Pinnules somewhat loosely set and slightly cuneiform, of a bright green colour on the upper surface, while the under surface is densely covered with a bright yellow powder, forming a striking contrast with the sori of an intense black situated round their edges.

N. DEALBATA.—A pretty dwarf habited North American species by no means common in cultivation, although of late years it has been imported plentifully by several firms in this country. It is found in a wild state in the crevices of rocks on the banks of the Missouri River, in Arizona, Texas, New Mexico, and Southern Kansas, where tracts of it are growing on the perpendicular faces of dry calcareous rocks, and especially where sheltered by overhanging projections. In general appearance it somewhat resembles another North American species, *N. fendleri*, but it is much smaller; the most evident distinction, however, is the fact that in this species the pinnae and pinnules of every degree are opposite in pairs, or nearly opposite. It also bears a certain likeness to the well-known and much appreciated *N. nivea*, a native of Tropical America, but this latter species, although very elegant as a whole, is in every way much coarser, has longer and less compound fronds, far heavier stalks and rachises, and larger ultimate pinnules than *N. dealbata*. It requires cool treatment.

Fronds triangular-ovate in outline, delicately three- or four-times pinnate; borne on clustered, viry, very slender stalks 3 inches to 4 inches high, and of a dark brown or nearly black and shining colour; these are produced freely

from a very short rootstock, chaffy with narrow brown scales; the rachises and branchlets, of the same colour as the stalks, are hairy, and the pinnae and pinnules mostly opposite in pairs, glaucous green above, white farinose underneath, often with the margins rolled under.

N. ECKLONIANA.—This is one of the handsomest species of the whole genus, and at the same time one which keeps comparatively rare in cultivation. It is a native of South Africa, and on that account no doubt it is generally treated as a stove plant, and with very bad results. It succeeds best in a temperate house where it is most attractive, principally on account of the different colours of the scales which cover the under sides of its fronds. The latter, when young or barren, are silvery white and of a silky texture, but when aged or fertile they are quite brown.

Fronds short, rarely exceeding 9 inches in height, produced from a creeping rhizome covered with light coloured scales, and keeping well above the ground; they are somewhat ovate in shape and tripinnate, with pinnae closely set and slightly undulated. The short stalks on which these are borne are covered also with the same silvery coloured scales which are to be found on the young fronds. Pinnae oblong and blunt at the extremities.

N. FENDLERI.—This is doubtless one of the most ornamental of the several North American species already in cultivation, and one which thrives well under cool treatment. It is found wild in clefts of exposed rocks from the mountains of Colorado to Texas, New Mexico, and Arizona. In habit it is very peculiar; the general outline of its fronds is broadly triangular, being nearly as broad as long. The main rachis and the primary and secondary branches are singularly flexuous, being bent at an obtuse angle alternately to right and left, and bearing a branchlet on the outer side of each angle. From this habit it results that the branches are never opposite or in pairs, but almost uniformly alternate. It sometimes also happens that the branchlet is nearly as large as the branch from which it springs, and the method of division is forking rather than pinnate. All the branches and branchlets are dark brown and smooth like the stalks, and they are so much refracted and divaricating, that the several fronds on one plant, as is often the case in *Pellæas*, are almost always much entangled and very difficult to separate without injury.

Fronds 4 inches to 6 inches long, broadly deltoid-ovate, four or five times pinnate, with rachis and all its divisions flexuose and in zigzag, divaricate, brown and shining; borne on numerous wiry, tufted stalks, polished and dark brown in colour. These arise from a short creeping rhizome covered with narrow light brown chaffy scales. Pinnules sometimes opposite, sometimes alternate, obovate oval and entire, or two or three lobed, with their upper surface of a bluish green and their under surface covered with a dense white powder.

N. FERRUGINEA.—This is an old inhabitant of gardens, and although a species found growing in a wild state in Columbia, Ecuador, Venezuela, Peru, and even Jamaica, it is generally imported from North America, where it grows abundantly in rocky places along the Rio San Pedro and Rio Grande, in Texas, and in the Organ Mountains of New Mexico; there it is abundant on calcareous and various kinds of igneous rocks, and also on the ground. As a North American species it is perfectly distinct, as there is no other Fern in the United States with which it need be confused. Apart from the difference of the pinnae, it is abundantly distinguished from *N. sinuata*, the only other pinnate species, by the nature of the covering of the pinnae, scaly in that species and highly tomentose in this. The other woolly or tomentose *Nothochlænas* found in that part of the world have all three or four times pinnate fronds, very unlike those of *N. ferruginea*. It is of erect habit, and although of a somewhat stiff appearance, is nevertheless very interesting, through its fronds, which are provided with from twenty to thirty-five pinnae on each side, being moderately acute and tapering slightly from the middle to the base, where the pinnae are often half an inch apart, but the upper ones are crowded, and sometimes even overlapping. Their upper surface is greenish grey from a fine villous pubescence, while their underside has a dense covering of fine woolly hairs, which are sometimes nearly white, at other times light ferruginous brown, and again of a deep

brown colour when perfectly mature. It requires cool treatment.

Fronds linear-lanceolate, 8 inches to 12 inches long, hardly 1 inch wide, erect, leathery, pinnate, borne on tufted, wiry, dark brown stalks a few inches high and woolly, like the rachis, with sometimes deciduous rusty fibres; these rise from a creeping, thick rootstock covered with narrow, blackish, rigid scales. Pinne numerous, oblong-ovate, almost sessile, and pinnatifid into six or eight close-set little oblong lobes on each side. Sporangia of a very dark brown colour and situated at the margins of the lobes, where, by being slightly recurved, it seems as if making an attempt at forming an involucre.

PELLÆA.

INODOROUS MANURES.

As "J. S. W." aptly remarks (p. 146), gardeners have but little faith in a manure with little or no smell to it, and amateurs will do well to be less fastidious in the matter. According to my experience, manures, whether solid or artificial, that are inodorous possess little real strength, and I find in each case the stronger the scent the more fertility the manure contains. For instance, the most effective and lasting solid manure I have yet seen employed is that known as fish manure, this being a mixture of condemned fish, blood, and other matter collected near the markets. Nothing could possibly be more offensive than the smell from this manure, and the wonder is that the purchasers should be allowed to cart it through a town. It was thinly distributed over several acres of good loamy soil and well stirred into the surface. Another width of land was sown with Amies' manure at the rate recommended by the vendors; while on the other side of the breadth dressed with the fish manure another width of land was dressed with the best solid stable manure as procured from the London stables. The latter, I may add, is very different to the manure private gardeners are, either from necessity or choice, in the habit of using, being nearly fresh and as yet containing all its fertilising properties and plenty of perfume, while that frequently used by gardeners has, perhaps, been employed for affording bottom heat and has become little better than a mass of humus. The whole of the land above mentioned, amounting in all to about ten acres, was planted with Brussels Sprouts, and I paid several visits in order to watch the results of the experiment. Almost from the commencement it was possible to discern a marked difference in the progress of the plants, and eventually we could tell to a row how far the fish manure went, the superiority being so marked. I have mislaid my notes, and therefore shall not attempt to give the costs of the different manures, but will only state that the fish manure was the cheapest of the three, and proved by far the most perfect manure, this also being demonstrated when the ground was subsequently cropped with Runner Beans. Amies' manure was cheaper than the stable manure, but was by no means so effective, neither in the case of the Brussels Sprouts nor the successional crops of Runner Beans. I do not recommend gardeners or the owners of gardens to use the fish manure, especially if they have neighbours, or they may anticipate a visit from the sanitary officer, but I do advise them to use their solid manures before they have lost their scent, this being tantamount to a loss of at least half their value. If the manure cannot be utilised for a time, then some steps should be taken to preserve the ammonia and other soluble, perfect or imperfect, salts it may contain. The least that can be done is to form a good bottom with ordinary garden soil, covering the heap when formed with more of this soil, this serving to enclose or absorb much that would otherwise be lost, and also considerably increasing the bulk of good manure when the mixture shall be turned. I have tried several experiments and have watched others conducted with various artificial manures, and have arrived at the conclusion that the strongest smelling of them all is also the most perfect, this being that known as Beeson's manure, and which "J. S. W." fully described. The next best is Standen's, this, however, being very little, if any, better than good Peruvian guano—I mean in its effects. Beeson's manure we are obliged to store in an outhouse,

being too strong even for the potting shed. If used with discretion it is remarkably effective, but, at the same time, I must warn any that may be tempted to give it a trial that in the hands of a careless person it may work much mischief. A very small sprinkling should be given, and care should be taken not to lodge any on the stems or leaves of plants, or it will scar them. The roots of Tomatoes, Melons, and Cucumbers are soon attracted by it to the surface, and all the plants are greatly benefited by it. The last mentioned, which commenced fruiting early in the year, are, with the aid of Beeson's manure, still in full bearing, and will last till such times as the house may be wanted for other purposes. Other seasons the worm which affects the roots of the Cucumbers have necessitated an early clearance, but Beeson's manure would appear to be a good antidote for this pest. It has also been used with marked advantage on such plants as Crotons, Dracænas, Eucharises, Gardenias, Stephanotis, Allamandas, Coleuses, Ferns in variety, Calanthes, Begonias, Fuchsias, Pelargoniums, Carnations, and various other stove and greenhouse plants. The scent from it, I admit, is not very agreeable at first, but it soon becomes to be scarcely noticeable.

W. I. M.

JOTTINGS FROM THE CHANNEL ISLANDS.

A MOST enjoyable and interesting holiday trip may be derived from a visit to the beautiful Channel Islands. To a gardener especially the pleasure and interest is tenfold. We left Plymouth on a Friday evening at eight, the sea being smooth and the weather all that could be desired, and after a fine passage of about ten hours we rounded the south-west end of Guernsey, steaming along the shore to St. Peter's Port close enough to get a distinct view of the unrivalled coast scenery—the Hanoise Lighthouse, Petit Port, Moulin Huet, and Fermain Bays, up to Castle Cornet—when we came into full view of the town and harbour, with its fine piers, fortifications, and light-houses.

The most striking object to a gardener is the large number of glass houses seen in and around the town in all directions extensive slopes being entirely covered with glass structures, chiefly vineries, where are grown those hundreds of tons of Grapes and Tomatoes annually sent to the London and other English markets. One grower told us that they had up to that time (August 10) exported over 200 tons of Grapes and fully as many Tomatoes, and that there still remained some scores of tons to be sent off, though only thirty years ago the whole was less than 20 pounds, packed in a single box. We visited great numbers of these vineries both in Jersey and Guernsey, amongst amateur as well as professional gardeners, from the humble lean-to of 20 feet by 10 feet to the gigantic span of 870 feet by 30 feet (the latter at St. Aubin's, Jersey), and the only secret we could discover in the production of those heavy crops of highly coloured Grapes, possessing a fine hammered appearance and quality that left nothing to be desired, is the natural soil of the islands, which consists of a rich sandy loam resting upon a gravelly subsoil. One striking feature was the general flatness of the roofs, scarcely any exceeding an angle of 25°, and many even less than that, to which we think (at least in part) may be attributed the general healthy state of the Vines, Peach trees, &c., and their freedom from insect pests, especially thrips and red spider. We made particular enquiries respecting the quantity of water given to Vine borders, and were told that it was impossible to water heavily, the supplies being so very limited. Many borders were entirely inside, some part in and part out, others altogether outside, the favourite manure being crushed bones. Nearly every house was crowded with Tomatoes underneath the Vines, producing enormous crops of fruit; one of which we saw weighed 25 ounces. Skilled gardeners, we were given to understand, are paid fixed salaries, and in addition receive a good percentage on all they can sell, the employers of course providing the capital, the results proving a source of considerable profit

to both. Work is done quickly; for instance, a large vinery is built in the autumn, the Vines planted, and a crop of Potatoes or other vegetables taken off early in the spring, when the Tomato plants are ready for putting out. These are grown in rows across the house 4 feet apart and trained to upright trellises; the produce is enormous, and fetch from 3d. to 6d. per pound wholesale price.

By far the largest portion of Grapes are grown in Guernsey. We visited several private establishments on both islands, including Capt. Mansell's, Somerset House, where Mr. Peters is gardener, and Dr. Lacy's, Saumarez Lodge (gardener, Mr. Cameron), in the suburbs of St. Peter's Port, both well kept gardens; here large quantities of fruit and flowers for export are grown. In the latter place were two large houses devoted entirely to Eucharis amazonica, planted out in beds heated with hot water, and such a sight we never before beheld. The thousands of flower-spikes amidst clean luxuriant foliage were alone worth a long journey to see. Mr. Cameron told us he never got less than three, and sometimes as many as four crops a year. Here also we saw a splendid lot of *Lilium auratum* in pots.

In one of our rambles in Guernsey, after passing through one of those charming water lanes, we came upon a most luxuriant mass of *Gunnera scabra* about 200 yards long, growing in the bottom of a deep rocky ravine leading down to the head of Fermain Bay, with a small stream of water percolating through or between the crowns, a situation which appeared to suit them well. We should much like to have seen its gigantic congener, *G. manicata*, under the same conditions. It occurred to us, respecting this large mass of *G. scabra*, that a crown had originally been planted high up in the said ravine, and that they had been extended by the stream of water depositing the seed on its way down to the sea. The owner did not appear to value it much, for we saw many visitors on excursion cars carrying leaves from 5 to 6 feet across, and using them for sunshades.

No gardener who can spare the time should fail to visit Mr. Smith's Caledonian Nursery, where there is much to be seen of great interest, many ordinary greenhouse plants growing and flowering luxuriantly on the open walls, including *Mandevilla suaveolens*, *Daphne indica*, *Rhynchospermum jasminoides*, *Berberidopsis corallina*, *Edwardsia grandiflora*, *Nicotiana affinis*, the beautiful Lily of the Valley tree (*Clethra arborea*), and fine standard bushes of *Erica arborea* fully 20 feet through and nearly as many feet high. A large bed of *Sparaxis pulcherrima* was a most striking object with stems from 6 feet to 8 feet long, gracefully arching over with the weight of their lovely pendent heads of bloom, and of various rich shades of colour. Mr. Smith also possesses one of the choicest herds of Guernsey cattle to be found on the island, many of which are sold for export to America at fabulous prices. The owner was most kind and courteous in personally showing his animals as well as everything of interest in the nursery. One day we devoted to a ramble over the island of Sark, still rich in primitive beauty, quaint and pretty cottages in lovely sheltered nooks, covered to the tops of the chimneys with *Pelargoniums*, *Fuchsias*, or *Myrtles* completely smothered in blossom.

We next visited the fine old gardens of the Seigneurie, or Manor House, the grounds laid out with great taste and well stored with good things too numerous to mention, many of them not sufficiently hardy to stand our English climate; then we walked across the wonderful Coupee Pass, a natural bridge 400 feet high connecting Little Sark with Great Sark. The rock scenery of this island we think surpasses all the others in romantic beauty and grandeur, but it is difficult and dangerous to get at. The only landing is by small boats, and then to make your way through a tunnel cut in the face of the cliff to the top of the island; consequently it is not so much overrun with tourists as the other islands, which may perhaps account for much of its primitive beauty.

In Jersey we visited many private as well as public gardens, including the Tropical Gardens and

old Manor House at Rozel, both full of interesting objects to a gardener. The latter is a most charming spot—the grounds well wooded, the trees being much larger than we expected to find so near the sea. One view in the grounds we shall not soon forget—standing upon a rustic bridge and looking up over a lovely pond shaded by overhanging trees, one, a deciduous Cypress, being 70 feet high with foliage from top to bottom. A bright flower garden and lawn beyond is terminated by a quaint old Ivy-covered church belonging to the mansion. On visiting the gardens of Government House on August 13 we found a horticultural show was being held there; and through Colonel Howell we were favoured with a private inspection while the judging was proceeding. A cleaner, fresher, or healthier show of plants, fruit, and flowers we never saw brought together. The exhibition occupied two large tents. A fine display of standard double and semi-double Pelargoniums first took our attention, with clean stems 4 feet 6 inches high and umbrella heads as much through—a perfect mass of flowers. A fine group of Filmy Ferns, with a *Todea superba* 4 feet high and 5 feet through, also a fine *T. pellucidum*, and a *Trichomanes radicans* fully 5 feet over, with fronds a foot long; also the finest lot of *Fuchsias* we ever saw staged. There were a few Orchids, but none worth special notice. There were grand plants of *Adiantum farleyense* and *Flemingi*, a very fine lot of *Liliums* of the *speciosum* type, with several fine pots of *auratum*. Cut flowers were there in immense number, quite as fresh as if growing on the plants. Single Dahlias were shown in great variety; one a distinct green, but more curious than beautiful, and might easily be mistaken for a clump of dwarf Sedums. The table decorations (six in number) were very good; in fact, we never remember seeing better. Fruits were well represented, especially Grapes, Peaches, and Figs. Melons were very inferior, only three small fruits being shown. There were abundance of Apples and Pears, but not so good as we expected to find from such a fruit-growing centre. Strawberries of immense size, with all kinds of small fruits, including Gooseberries, Cherries, Currants, and Raspberries, were shown in splendid condition, though so late in the season.

We visited the gardens of Steep Hill House, whence came many of the best things in the exhibition, and received a most hearty welcome from the gardener, Mr. Reeves, who showed us over Mr. Robbins' beautiful place—one of the best kept and best stocked gardens we saw in Jersey. We cannot speak too highly or gratefully of the kind and courteous reception we met with from everyone, high and low, at every place we visited, never meeting with a single rebuff, though I am afraid we were a little presumptuous in our endeavours to see private places. One thing is certain; the Channel Islands are well up to the times in matters horticultural, and we flatter ourselves that we picked up many useful hints from our visit, and would strongly advise all our brother spades who have the opportunity to go and see for themselves. I had almost forgotten to mention the splendid markets of St. Peter's Port and St. Heliers, which alone are well worth the journey to see.

Trelisick, Truro.

W. SANGWIN.

NOTES ON GARDEN TOPICS.

Dr. Lindley.—It is very amusing to notice how certain writers affect to deride the author of the "Theory and Practice" and all his works whenever his opinions happen to be brought up against them in any controversy or otherwise. He is still an awkward opponent to thrust in the way of those feeble exponents of horticulture who air their crotchets whenever they are permitted to do so, but, being dead and gone, he is not formidable personally, and they can sneer with impunity. Yet there is never a column of their writings but contains indisputable evidence that they are themselves the unconscious pupils of the doctor, for few of them have really read his books, and fewer still of his critics appear to own a library sufficiently extensive to include them. They have got their

information second-hand, and are innocent of any knowledge of their real instructor. Ordinarily well-educated horticulturists and gardening authors of position still refer to Lindley, and acknowledge his authority, and at least speak of him with becoming respect, but there are "cads" among horticultural writers as well among other classes, and it is the custom with these to put the doctor "to one side" with a scrape of their pen whenever he is obtruded inconveniently upon their notice. Numbers of instances of this have occurred lately, and the fact is mentioned here in order that such detractors may be branded when they appear. Dr. Lindley was not a gardener—did not profess to be one—but he set himself the task of collecting materials from every practical and scientific source and putting them in a shape to show the connection between principles and practice, so as to enable gardeners to proceed to work on rational grounds. For this service he is rewarded in the manner described by those who have not even grasped the purpose of his work, far less its value. Putting aside the matter of the book, Lindley's "Theory and Practice of Horticulture" is a work any young gardener may read with great advantage for its literary excellence alone. It is written in that clear and forcible style in which a man of Lindley's knowledge and accomplishments only can write, and which, if it were oftener imitated, would make horticultural literature both more instructive and entertaining than it is. No one has ever believed or said that all that Lindley wrote was correct, but he is still the safest guide we have, and will continue to be for a long time to come.

The summer heat and light.—Lindley pointed out long ago the difference a few degrees one way or other in the average temperature made. This season anyone may see for themselves what a few degrees constantly maintained can accomplish. I suppose the temperature of the past summer has hardly exceeded what is regarded as the average summer temperature of these islands, but it has exceeded the average of the last ten or a dozen years by a few degrees, and the result has been a markedly advanced condition of all crops, and the gain of a month at least in the gathering of the corn crops. No doubt the greater amount of sunlight has also helped towards this result, but, of course, heat and light must be reckoned together in such a case, for the two are intimately allied in the maturation of the crops. In the north Apples and Pears and other fruits have attained a size and quality that have not been observed for years, and vegetation everywhere is in a forward and unusually mature state. It has been stated that, owing to the low mean temperature and generally unfavourable weather of recent years, both plants and trees have been visibly crippled in many cases, and that the effects will be visible for years to come, and until a series of favourable seasons puts things in tune again. Barring the effects of drought, however, everything now looks well, and vegetation wears an aspect it has not done for a long time, and all because of the few more degrees of heat and the light which we have experienced between April and September. There is no need to point the moral to forcers of fruits and vegetables.

Grapes cracking.—When writing on this subject last year I spoke of a Madresfield Court Vine we had here on which the berries cracked more or less while the roots were above hot-water pipes and well drained, so that the cracking could not be caused by excess of moisture; and I stated that since these pipes had been removed and the border kept moister than before the cracking had decreased. Well, this season the Vine has a heavy crop of bunches—just now assuming the blue-black colour—and not a berry has cracked yet. I think we ought to regard the theory of moisture being the cause of cracking as exploded.

The bulb catalogues.—These have been out some time, and we observe the Daffodil receives a much more prominent place than usual. One London firm issues a Daffodil and Lily catalogue alone, and there is an attempt to simplify

the classification of the varieties, making the lists more intelligible than before; but these are still too voluminous and complicated for the general cultivator and gardener, who will learn more by looking at the "representative group" engraved on the outside of the covers than he will inside of them. Messrs. Carter, I see, have adopted a classification of their own that I have no doubt will suit their customers very well. They divide the whole family into three "groups," viz., double and single varieties and Jonquils, and these embrace only the most generally worthy sorts. This is an excellent abridged list and safe guide for those who are not Daffodil students. It is unlikely that any but the typical varieties will ever be extensively grown in gardens generally. J. S. W.

SOCIETIES.

NATIONAL DAHLIA SOCIETY'S SHOW.

SEPTEMBER 5 AND 6.

THE annual exhibition of this society took place at the Crystal Palace on Friday and Saturday last. It was the finest show that the society has yet succeeded in bringing together, and was highly creditable to those who promoted it. Seldom, indeed, has such a large exhibition of Dahlias been held, and, considering the trying character of the weather, it was not easy to find fault with the quality. The southern growers experienced much difficulty in getting good blooms to open fully at the right time, and besides, that desperate enemy of the Dahlia grower, yellow thrips, was unusually active; so numerous, indeed, were they, that they could be shaken out of the blooms in hundreds. The nurserymen's classes for show and fancy varieties were not quite so well filled as the committee might have wished. The contest for the highest prize was between the two veteran growers, Mr. Charles Turner, of Slough, and Messrs. Keynes, Williams, & Co., of Salisbury. Mr. Turner showed an excellent collection for the first prize in the class for forty-eight blooms of the show section. The flowers were of uniformly high quality and well arranged. The sorts were:—

J. B. Service
Sunbeam
Clara
Sir G. Wolseley
Royal Queen
Cardinal
John Neville Keynes
James Cocker
Mrs. Shirley Hibberd
Prince of Denmark
Henry Walton
Champion Rollo
Mrs. Percy Wyndham
Statesman
James Service
Henry Bond
Muriel
Joseph Ashby
George Rawlings
Julia Wyatt
John Staudish
James Vick
Lady Gladys Herbert
Seraph

Flag of Truce
Hope
Imperial
Condor
Rosetta
Mrs. G. R. Jefferd
Michael Saunders
Goldfinder
Alexander Cramond
Acme of Perfection
James Stevens
Mrs. Forman
Ruby Gem
Mrs. Harris
Constance
William Rawlings
Ethel Britton
John Wyatt
Herbert Turner
Lady Wimborne
Burgundy
Lord Chelmsford
Mrs. Gladstone
Rev. J. Goodday

Messrs. Keynes, in their turn, outdistanced Mr. Turner for twenty-four fancy blooms. A few of the flowers in Mr. Turner's collection were not sufficiently opened, and as a whole they were not so even in quality. The Messrs. Keynes' collection was very fine indeed, and contained a bloom of General Gordon, which obtained the prize as the best bloom of any fancy variety in the show. The following are the sorts shown:—

George Barnes
James O'Brien
Maid of Athens
Rev. J. B. M. Camm
Professor Fawcett
M. Chauvire
Fanny Sturt
Miss Annie Melsome
Miss Lily Larze
Duchess of Albany
John Lamont
Gaiety (sport)

John Forbes
Mrs. N. Halls
Chorister
Fred. Smith
Parrot
Flora Wyatt
Lottie Eckford
Alderman
Rebecca
Gaiety
John Saunders

Messrs. Saltmarsh, of Chelmsford, were the successful competitors for twenty-four blooms of the show varieties. They exhibited a very even col-

lection of well-finished blooms. The varieties were:—

Sunbeam	Earl of Beaconsfield
Royal Queen	Revival
John Wyatt	Constance
John Neville Keynes	Mrs. Harris
Hon. Mrs. P. Wyndham	Burgundy
Ethel Britton	Mrs. Stancombe
Rev. J. Goodday	Mr. Geo. Harris
Mrs. Dodds	Mrs. S. Hibberd
Sam. Plimsoll	Rosy Morn
Lady Gladys Herbert	Henry Walton
Shirley Hibbert	James Cocker
Vice-President	

Messrs. Saltmarsh were successful in obtaining the first prize for twelve fancy blooms. They were:—

Gaiety	Flag of Truce
Galatea	John Lamont
Richard Dean	Rev. J. B. M. Camm
Lady Antrobus	Hercules
Oracle	Wizard
Rebecca	Egyptian Prince

Amateurs' Classes.

It was in this division that the greatest competition took place, and a difficult task it was for the judges to distinguish the various points of merit between some of the collections. As a full list of the successful competitors will be found in our advertisement columns, it is unnecessary to give them here. We need only mention that the first prize collection of twenty-four show blooms from Mr. T. Hobbs, Lower Easton, Bristol, was worthy of special attention from the excellent quality of the blooms, cut, as it seemed, to the very day. The varieties were:—

Hon. Mrs. Percy Wyndham	Mrs. Shirley Hibberd
James Vick	Lord Chelmsford
Ethel Britton	Senator
Miss Cannell	Richard Edwards
Prince Bismarck	Mrs. Dodds
John Standish	Mrs. Stancombe
C. E. Cope	Herbert Turner
James O'Brien	Henry Walton
Lady Goughly	James Cocker
J. B. Reid	Rev. J. B. M. Camm (se'f)

The well-known Dahlia grower, Mr. H. Glascock, of Bishop's Stortford, deserves special mention for his excellent exhibit of twelve show and fancy blooms, which obtained the Veitch Memorial medal and money prize offered by the Veitch Memorial trustees. The collection of twelve blooms, moreover, contained the best bloom of any show variety in the exhibition, a very perfect one of Mrs. Gladstone; the others were Imperial, Hon. Mrs. P. Wyndham, Rev. J. Goodday, Miss Cannell, Shirley Hibberd, Countess of Ravensworth, Sir G. Wolesey, Prince of Denmark, Harrison Weir, Black Knight, and Flag of Truce. The fancies were Barnaby Rudge, Chorister, Professor Fawcett, Mrs. Saunders, Miss Lily Large, and Wizard. Mr. Glascock also won the first prize for twelve fancy sorts; the blooms were very fine, and gave evidence of careful culture. The varieties were:—

Miss L. Large	John Forbes
Henry Glascock	Mandarin
Mrs. Saunders	Flora Wyatt
Gaiety	Professor Fawcett
Peacock	Egyptian Prince
Miss N. Halls	

Mr. H. Hobbs was awarded the first prize for the following six fancy blooms, Flora Wyatt, Professor Fawcett, Lottie Eckford, Hercules, and John Lamont. Mr. J. Tranter's twelve show blooms, which were highest in their class, were uncommonly fine, especially Clara, Hon. Mrs. P. Wyndham, Mrs. Gladstone, William Rawlings, and Goldfinder. Mr. A. Painter, Moreton Hall, Congleton, was successful in taking the first prize for six blooms of show kinds with John Henshaw, Henry Walton, Ethel Newcombe, Mrs. Gladstone, and Clara.

THE POMPONE VARIETIES made an excellent show in themselves; arranged as they were in clusters of ten flowers in a bunch with the buds and leaves, they had an excellent effect. Again Mr. Turner and Messrs. Keynes had a keen contest for the first place in the twenty-four varieties, Mr. Turner winning, owing to the better arrangement of his blooms. The chief prize-winners in this division were Mr. Turner, Mr. J. Henshaw, of Harpenden, and Messrs. J. Burrell, of Cambridge. A selection of the best varieties would include

Mdlle. Valentine Faconet
Favourite
Lady Blanche (the best white)
Grass au Wien
E. F. Jungker
Hedwig Polwig
Little Bobby
Cupid
Countess Von Sternberg
Little Duchess
Guiding Star
Gem

Fair Helen
Isabel
Titania
Sensation
Mabel
Little Nigger
Northern Light
White Aster
Prince of Lilliput
Little Arthur
Dora

The single varieties were also exhibited in bunches of ten, and set up like the pompones over a surface of green moss. Mr. John Lamont, of Hope Street, Edinburgh, had perhaps the best blooms, but was disqualified, owing to his putting more than ten flowers in a bunch. The best blooms were Attraction, the colour being "crushed strawberry;" Volunteer, a good striped form; Invincible, maroon; and Miss H. Cameron. The principal prize-takers were Mr. Turner and Messrs. Burrell, the varieties of greatest merit being Winifred, a fine lilac-rose; Evening Star, Sunbeam, Defiance, Ellen Terry, Harlequin, Mr. H. G. Head, Alba, Acquisition, Duchess of Westminster, Queen of Singles, Paragon, Lutea grandiflora, Ascalon, Crimson Beauty, Madge Thompson, and Mauve Queen. Mr. T. S. Ware exhibited excellent groups of single and border Dahlias. Two very fine border kinds are Cochineal (crimson) and General Gordon; their merits will depend much upon the habit of the plants and whether they are free flowering.

First-class certificates were awarded to Messrs. Keynes for the following fancy Dahlias: Romeo, buff, flaked and striped crimson, the flowers perfectly formed; General Gordon, a very fine variety, flowers of the finest form, of a rich yellow-flaked and striped with orange-red; Mrs. Langtry, show Dahlia, yellowish buff tipped with crimson.

CRYSTAL PALACE FRUIT SHOW.

SEPTEMBER 5 AND 6.

NOTWITHSTANDING the frequency of large fruit shows in London this season, there was an excellent exhibition at the Crystal Palace on Friday and Saturday last—as fine as any of its predecessors of late years. The liberal prizes that are offered here annually for fruit usually brings out a strong competition among the foremost gardeners in the country, and the present occasion was no exception to the rule, although several habitual exhibitors of high standing were conspicuous by their absence—a circumstance attributable, no doubt, to the proximity of the great fruit show at Dundee held this week. The show was not held, as usual, in the naves of the palace, but in capacious tents adjoining, which are far better adapted for a flower or fruit show, inasmuch as they admit of the exhibits being more effectively arranged, and somehow they show to better advantage under canvas. The show was held in conjunction with that of the Dahlia Society, so that the whole formed an attractive as well as an extensive display. The schedule comprised thirty-two classes for fruit, all, with the exception of two, being more or less numerously represented. The quality on the average was good, but it would have been better for the reputation of some of the exhibitors if they had not displayed their exhibits, some of which were quite below mediocrity.

COLLECTIONS OF FRUIT were intended to form a marked feature in the show judging by the amount of prizes offered, there being no less than £87 offered in four classes. The chief class was for twenty-four dishes. It is obvious that none but the very largest gardens could provide such a number of distinct kinds of fruits as this even in September, and even these would experience a difficulty in mustering so many; therefore it was not surprising that there was but one exhibitor in this class, and it was evident that he had had every resource under contribution in order to produce the stated number, as may be inferred from the fact that his collection included Blackberries and Mulberries. The Earl of Haddington's garden at Elvaston Castle furnished this multifarious collection, and his gardener, Mr. Goodacre, had some highly creditable dishes. There were four com-

petitors in the class for twelve dishes—a more reasonable number. The best collection came from the Gunnersbury Park gardens, and an uncommonly fine one it was, affording good evidence of Mr. Roberts' skill. He had superb bunches of Madresfield Court Grape, which above all others is grown to perfection at Gunnersbury Park, the bunches being large and the berries perfection in every way. Not much inferior were the Alexandrian Muscats. The other dishes in the collection were, William Tillery and Golden Perfection Melon, Sea Eagle Peach, Humboldt Nectarine, Williams' Bon Chrétien Pear, Quarrenden Apple, Brown Turkey Figs, Jefferson Plum, and Morello Cherries. The next finest dozen dishes were from Shrubland Park, among which Mr. Blair showed extremely fine fruits of the Granadilla, the fruit of Passiflora quadrangularis, an uncommon exhibit; a weighty smooth Cayenne Pine, Red Astrachan Apples, Hero of Lockinge and Royal Ascot Melons were other noteworthy dishes from Shrubland Park. The third collection was from Elvaston Castle. The best of the two collections of eight dishes was that from Lord Carington's gardener, Mr. Miles, Wycombe Abbey, which consisted of admirable Madresfield Court Grapes and good Muscats, Stirling Castle Peach, Pine-apple Nectarine, Hero of Lockinge Melon, Kirke's Plum, Figs, and a Queen Pine. The other collection, contributed by Mr. Ocle, from Blissing Hall, Aylsham, included the finest Williams Pears in the show as well as other dishes of high quality.

GRAPES were decidedly the chief feature in the exhibition, and nine classes were set apart for them. The principal class was for ten kinds, a large number to exhibit even from the largest gardens. Hence there was a limited competition, there being but two collections, one from Gunnersbury Park and the other from Syon House. The sorts were restricted to six black and four white kinds, a regulation that seems too hard upon would-be exhibitors, for some may have the requisite number of kinds, but not of the specified number of black and white. Mr. Roberts had in his first collection excellent examples of Alnwick Seedling, Foster's Seedling, Madresfield Court, and Muscat of Alexandria; the other sorts were Gros Maroc, Black Hamburg, Trebbiano, Black Alicante, Buckland Sweetwater, and Gros Colmar. Mr. Woodbridge's collection included some fine bunches of Lady Downes, Muscat Hamburgs, Madresfield Court, Golden Champion, and others. There were four exhibitors of collections of five kinds, and a keen competition took place between that from Wycombe Abbey and Mr. Atkinson's gardener (Mr. Hudson) from Gunnersbury House. There was but little to choose between the two sets, though Mr. Miles took the first place. His sorts were Madresfield Court, Lady Downes, Muscat of Alexandria, Foster's Seedling, and Black Alicante. The Alnwick Seedlings in Mr. Hudson's collection were the admiration of all, and he also had capital examples of Muscats, Madresfields, Fosters, and Black Hamburgs. There was a fair competition in the classes for specified varieties; the Alexandria Muscats formed a particularly fine class, there being eight sets of three bunches, the finest, from Mr. Middleton, the gardener at Rainford Hall, St. Helens, being extremely fine. The bunches and berries were not only large, but the colour was of that beautiful amber transparency which every Grape grower aspires to produce in his Muscats, but very seldom attains. The other prize winning bunches from Syon House and Gunnersbury House were likewise excellent, but lacked the colour of the first prize set. Black Hamburgs were shown by nine, but there were but few remarkable bunches, that is compared with what one usually sees at large shows at this season. Mr. Temple's garden, Leyswood, Groombridge, supplied the best. Only one exhibitor showed Gros Colmars, and these were not very remarkable. On the other hand, the class for Madresfield Courts was an excellent one, for there was not an inferior set among the six shown. The finest came from the Duke of Northumberland's garden at Syon, and uncommonly fine they were, perfect in every way, not only large in bunch, but with the huge berries firmly knit into compact

masses. The colour and finish left nothing to be desired. Mr. Woodbridge has certainly the knack of growing this fine Grape to the highest perfection. Mr. Birket Foster's gardener at The Hill, Witley, and the Earl of Harrington's gardener supplied the other prize bunches, and highly creditable they were also. Black Alicantes were fairly good, the best of the five sets being highly creditable to Mr. Howe, the gardener at Park Hill, Streatham Common. The best exhibit of white Grapes of any other variety was that from Mr. Woodbridge, who had excellent Muscats. Golden Queen, fairly good, was second, and Foster's were third. Among black sorts of any other variety, by far the finest were three superb bunches of Alnwick Seedling, from Mr. Atkinson's garden at Gunnersbury House, where the requirements of this capricious Grape seem to be thoroughly understood. Nothing could well surpass the perfect finish of Mr. Hudson's bunches in this class.

PEACHES AND NECTARINES formed a good class and were numerous. The best four dishes were from Mr. Roger Leigh's garden at Barham Court, and exceedingly fine they were, the sorts shown by Mr. Haycock being Walburton Admirable, Lord Palmerston (highly coloured), Barrington, and Bellegarde. Mr. Oclec in his second lot had highly tinged fruits of Princess of Wales, as did also Mr. Blair. Mr. Haycock also showed the finest single dish among eight, the sort being Walburton Admirable, extraordinary specimens. The best four dishes of Nectarines among five collections consisted of Pitmaston Orange, Boston, Rivers' Orange, and Pine-apple, all uncommonly fine. These were from Mr. Naylor's garden, Hooton Hall. Among other sorts shown finely by the other exhibitors were Balgovan and Albert Victor. The Pine-apple variety took the first and third prizes in the single dish class among six. Two collections of six Peaches and six Nectarines were shown, one from Gunnersbury Park, the other from Barham Court. Mr. Roberts' first collection consisted of Princess of Wales, Sea Eagle, Grosse Mignonne, Barrington, Bellegarde, and Violette Hâtive Peaches; Lord Napier, Victoria, Violette Hâtive, Pitmaston and Rivers' Orange Nectarines. Melons, as usual, were numerous, there being twenty-one green-fleshed sorts and fifteen red-fleshed. The three prizes for green sorts were taken by Hero of Lockinge, Victory of Bath, while Hero of Lockinge was third also. Among the fifteen red-fleshed sorts the best was Scarlet Gem; second, Victory of Bristol; third, Captain Lark's variety.

PLUMS were not remarkable either for numbers or quality, the competition in all the classes being confined to two or three competitors. The sorts shown best in the collections were Cox's Emperor, Victoria, Cooper's Large, Pond's Seedling, Ickworth Impératrice, Prince of Wales, Perdrigon. Among the single dishes the finest were Jefferson's, Green Gage, Goliath, and Magnum Bonum.

APPLES were well shown. The best collection of fifteen kinds, from Barham Court, consisted of the following:—

Belle du Bois	Ribston Pippin
Stone's Apple	Annie Elizabeth
Warner's King	Duchess of Oldenburgh
Lord Suffield	Lady Derby
Echlinville Seedling	Worcester Pearmain
Summer Golden Pippin	Cox's Orange Pippin

Excellent also was another collection from Mr. Brassey's garden, Preston Hall.

The Barham Court garden furnished the best collection of Pears, and exceedingly fine they were, all of the first size. The sorts were Pitmaston Duchess, Williams' Bon Chrétien, Beurré Hardy, Conseiller de la Cour, Louise Bonne of Jersey, Clapp's Favourite, Durondeau, Doyenné Boussoch, and Beurré d'Amanlis. The best three dishes of ripe Pears were from Preston Hall, the sorts being Williams' Bon Chrétien, Brockworth Park, and Théodore. The best three dishes of ripe Apples, also from Preston Hall, consisted of Kerry Pippin, Gravenstein, and Quarrenden. Other early sorts shown were Coe's Golden Drop, Reinette du Laak, Shepherd's, and Duchess of Oldenburgh.

FRUITERERS' PRIZES.—The company offered three prizes—£15, £10, and £5—for a collection

of fruits representative of that obtainable in Covent Garden Market. The competition was restricted to fruiterers. Strange to say, only one fruiterer competed for these valuable prizes. This was Mr. G. H. Wingfield, who came all the way from Brighton with a really fine collection, extensive and thoroughly representative of the fruits obtainable in the best London markets at this season. Particularly noticeable were the fine Grapes, Pines, Williams' Pears, Tomatoes, Egg Plums, Melons, Apples, and others, in all about two dozen dishes. The collection was well displayed in a prominent position.

The miscellaneous exhibits of fruit were numerous, the most noteworthy being an uncommonly fine display of Peaches, Nectarines, Pears, Grapes, and Plums, and others from the famous fruit nursery of Messrs. Rivers at Sawbridgeworth. There were no fewer than thirteen kinds of Nectarines shown, every one of which had been raised by the Messrs. Rivers—no mean achievement, particularly having regard to the fact that almost every sort are of the highest excellence. Among the named sorts were the following:—

Chancer	Lord Napier
Milton	Humboldt
Spenser, wholly crimson	Pine-apple
Victoria	Orange
Newton	Gordon
Byron	Seedling (No. 34)

Of Peaches there were Crimson Galande (a beautiful dish of crimson fruit), Golden Rathripe, almost orange colour; Dymond. Besides these, there were splendid examples of Gros Maroc Grape and a numerous collection of Pears, all large and well grown fruits. An extra prize was awarded to Messrs. Rivers, and never has a prize been more worthily bestowed. An extra prize was taken also by Messrs. Cheal, of Lowfield Nurseries, Crawley, who exhibited a large and comprehensive collection of Apples and Pears from trees grown on their noted cordon plan. Messrs. Paul, of Cheshunt, Mr. Neighbour, of Bickley, and Mr. Walker, of Thame, likewise contributed more or less largely to the fruit display.

Cut Flower Classes.

Prizes were offered for a collection of Gladiolus spikes, not less than thirty-six varieties. Messrs. Kelway, of Langport, staged, as usual, an excellent collection, but fine though it was, and comprising some 120 spikes, it was quite eclipsed by an equally large collection from Mr. E. Campbell, of Cove Gardens, Gourock. This collection contained some magnificent spikes; they were well set up and tastefully arranged as to colour. Some of the spikes were 26 inches in length and carried from ten to twelve blooms fully open at one time. They were mostly French varieties; a few of the most remarkable were Carnation, a long, massive spike; Gloire de Fontainebleau, rosy lilac, shaded with white; Penelope, a tinted fawn colour; Maréchal Bazaine, a pleasing light scarlet with white lip; Madame Despartes, fine large white; Bicolore, red with distinct white blotch on the lip; Lafayette, a distinct sulphur-coloured kind with purplish crimson blotch on the lip, suggesting a G. purpureo-auratus parentage; Celimene, very fine; Horace Vernet, still a handsome variety, rich crimson; Giganteus, richly coloured flowers and long spike; De Mirbel had ten flowers open at one time; Camille, a splendid spike of pale lilac flowers. Messrs. Kelway's collection was mostly composed of their own seedlings, to one of which, Lord Wolseley, a first-class certificate was awarded.

HOLLYHOCKS were admirably shown in the far of cut flowers from the north of England; those sent by Mrs. Maynard (gardener Mr. G. Finlay), East Leyton Hall, Darlington, were very fine indeed, and they were the more creditable to the grower, seeing that most of them were seedlings. Messrs. Harkness also exhibited some fine blooms which might have beat the others if they had not been rubbed in transit. Asters were exhibited in considerable numbers and were of good quality. Mr. Henry Hooper and Mr. Cattley, of Bath, exhibited some remarkably fine white quilled blooms, but they were both surpassed in variety by a stand of blooms from Messrs. Saltmarsh & Son, of Chelms-

ford. The last named exhibitors were fortunate in also obtaining the first prize for French Asters with a clean, dissimilar, and well arranged tray of blooms. Messrs. Hooper and Cattley had larger and better flowers on their stands, but they lacked variety, although a few of them, especially a lilac and white striped kind, were very fine indeed.

Mr. James, of the Castle Nursery, Lower Norwood, exhibited an excellent assortment of cut flowers—stove, greenhouse, and hardy. There were splendid spathes of Anthurium Andreanum, Lapaeria alba and rosea; the pale blue Plumbago capensis was very pretty indeed, while Ixoras in variety and Saccolabiums had a pleasing effect.

Messrs. Laing, of Forest Hill, arranged an extensive and excellent group of tuberous Begonias; it might have been more effective if the too common system of arranging the plants on a flat level surface sloping to the back had been avoided, but this did not detract from the merits of the flowers, which were of their usual high class quality.

Messrs. Cannell, of Swanley, appropriated a long table in the centre of the tent to their productions, which were arranged in their usual effective and exceedingly attractive manner. They had stands of show Dahlias of first class quality and some blooms of double-flowered Begonias, representing a rich collection. The garden varieties of the double Dahlia will be most useful for cutting in the autumn, as they are quite out of the common track. The white variety (Constance) is perhaps the most useful, but Germania nova is the most distinct in its rich, pale, rosy purple colour and the peculiar notching of its petals. The white Cactus Dahlia is named Mr. Tait, and Picta formosissima is quite novel in its tints of scarlet and gold. Cochineal will be a splendid border flower of a crimson colour. Here was also fine specimens of the green-flowered Dahlia and Mr. Miller, a fancy tipped kind, which might have been raised fifty years ago.

Mr. Charles Turner's arrangement of Liliun auratum rising from a groundwork of Palms was good in its way, and attracted considerable attention. Messrs. Paul & Son, of Cheshunt, had a group of hardy cut flowers, and Messrs. Paul, of Waltham Cross, excellent boxes of cut Roses. Messrs. Cutbush, of Highgate, and Mr. James, of Lower Norwood, vied with each other in producing excellent groups of plants. Early Chrysanthemums were shown fairly well by two growers, Mr. Davis's collection being far the finest, and none of the varieties were so conspicuous as the handsome Madame Desgrange, which had large pure white flowers freely produced. Mr. James also showed this fine variety admirably.

FIRST-CLASS CERTIFICATES were awarded to Messrs. Laing & Co. for Begonia Jules Lequin, a very fine crimson-scarlet double; Madame Emile Galle, also a double, of a delicate salmon tint; Erecta superba, a single crimson kind of fine habit and extremely floriferous; Goliath, a fine double of a lovely carmine-crimson. To Messrs. Kelway for Gladiolus Lord Wolseley, of a fiery red colour with a deeper coloured centre, a distinct and good variety.

A full list of prizes awarded at the foregoing shows will be found in our advertising columns.

ROYAL HORTICULTURAL.

SEPTEMBER 9.

THERE were numerous new plants and flowers submitted to the committee on this occasion, some possessing sterling merit, but the chief feature of the meeting was the large display of Dahlias of all kinds from such noted growers as Turner, Keynes, Ware, Cannell, Rawlings, and others. These, together with large displays of Gladioli from Messrs. Kelway and Roses from Messrs. W. Paul, rendered the conservatory uncommonly gay.

FIRST-CLASS CERTIFICATES were awarded to—

AMASONIA PUNICEA.—A new stove plant from Tropical America, for which a brilliant future may be reasonably predicted. It is not only an extremely handsome plant, but is absolutely distinct from any other plant in cultivation. It belongs

to the Verbena family, and is a near ally of the Clerodendron. The plant is of erect, shrubby growth, with large spreading foliage. The flowers are borne on terminal spikes about a foot in length, and very gracefully arch. The flowers are tubular and of a creamy white. Each is subtended by a brilliant floral bract, lance-shaped, and from 2 inches to 4 inches in length, and as brilliant in colour as those of the Poinsettia. These bracts, being so numerous, render the plant extremely attractive, and as they continue in perfection for a long time, the value of the plant is increased. Exhibited by Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea.

AERIDES LAWRENCEANÆ.—Unquestionably among the very finest species yet introduced. It may be best described as a magnified *A. odoratum*, as the growth is similar, likewise the flowers in shape and colour, but as twice the size of those of *A. odoratum*. They are ivory-white, tipped with amethyst. It is the same species which Messrs. Sander sold to Sir Trevor Lawrence some time since for a very high sum. The present plant was shown by Baron Schroeder, The Dell, Egham.

NEPHROLEPIS BAUSEL.—A new garden variety of, apparently, *N. davallioides*. The fronds have the pinnæ cleft into numerous fine segments, which give them a feathery appearance. They are about 18 inches high, and are almost erect. It is an extremely handsome Fern, and a real acquisition. Shown by Messrs. J. Veitch & Sons.

AMARYLLIS MRS. W. LEE.—Another lovely hybrid variety in the way of the now popular Mrs. Garfield. It results from a cross between *A. reticulata* and one of the hybrid race. The flowers are of medium size, of a delicate rose pencilled with a deeper hue. The plant shown by Mr. B. S. Williams, from his nurseries at Upper Holloway, bore a fine spike of five flowers.

BEGONIA OCTAVIA.—The finest double white tuberous variety yet raised. The flowers are large and rosetted, and of pure ivory whiteness. The habit is vigorous, dwarf and floriferous. Exhibited by Messrs. Cannell & Son, Swanley.

BEGONIA MADAME CROUSSE.—Another double tuberous variety with large finely shaped flowers, very double and of a soft salmony buff tint. Shown by Messrs. Cannell, and Mr. W. Bealby, Roehampton.

DAHLIA FASHION.—One of the bouquet race, a pretty flower of a bronzy buff colour. Mrs. Langtry, one of the fancy section, buff tipped and flaked with claret-purple. General Gordon, yellow, tipped and flaked with crimson-red. Shown by the raisers, Messrs. Keynes, Williams, & Co., Salisbury.

DAHLIA FORMOSA.—A new seedling variety of great merit. The flowers are of medium size, of circular outline, and good substance, while the colour, a rich deep crimson, is in fine contrast to the golden centre. Shown by the raisers, Messrs. Cheal & Sons, Lowfield Nurseries, Crawley.

GLADIOLUS W. KELWAY.—A splendid variety, having a massive spike set with bright scarlet flowers flaked with crimson and blotched with maroon. Sir Francis Bolton, also a massive spike of a vivid scarlet-carmine hue flaked with crimson. Both shown by the raisers, Messrs. Kelway, of Langport.

Among the more noteworthy of the other plants shown was a magnificent specimen of *Cattleya gigas*, an exceptionally fine variety, carrying no fewer than four flowers from one sheath. This came from Sir Nathaniel Rothschild's garden, Tring Park, a fine example of Mr. Hill's cultural skill, and to whom a cultural commendation was worthily accorded. Mr. G. F. Wilson showed a specimen of the darkest variety of *Lilium speciosum* named *rubrum*. A cultural commendation was accorded to Mr. Allan, Lord Suffield's gardener at Gunton Park, Norwich, for very fine flower-laden shoots of the white and red *Lapageria*, such as we described in THE GARDEN a week or two ago. A beautiful new seedling *Rhododendron* named *Souvenir de J. H. Mangles*, salmon yellow flowers, was shown by Messrs.

Veitch. Mr. Cannell had besides cut blooms of about two dozen distinct sorts of double *Begonias*, an extremely fine single one called *Total Eclipse* with large well-shaped flowers of a fiery crimson. An uncommonly handsome new seedling *Croton* named *Bealei* was shown by the Messrs. Carter, in whose nursery at Forest Hill it has been raised. The leaves are large, beautifully mottled, with green, yellow, and with crimson veins and stalks. The new Californian *Pentstemon labrosus* was shown in flower by Mr. Thompson, of Ipswich, who has introduced it. Its flowers are scarlet, produced on tall loose spikes. The New Plant and Bulb Company sent a full collection of *Montbretias*, which, however, lost their expanded flowers in transit. Two handsome plants of the variegated Pine-apple, each bearing a fruit, were shown by Mr. Alexander, Gifford House, Roehampton, and numerous new *Coleuses* were exhibited by Mr. King, Rowsham. Among them those named *General Gordon* and *Mary Kitchener* were the most noteworthy for distinctness and brilliancy. A new *Pelargonium* named *Queen of England* was shown by Mr. Tibbles, Harlesdon Park Nursery, Willesden. It is a market or decorative variety with pure white flowers, evidently a valuable kind for cutting.

DAHLIAS constituted one of the most prominent features of the meeting on this occasion, being represented in all the cultivated types of this fine autumn flower. It is little less than astonishing to see with what rapidity the single forms now so popular have come to the front, and are found in association with the show and fancy kinds, so many years the exclusive favourites of the florists. One need hardly wonder that they are appreciated by the lover of flowers; their simple form and varied colours render them highly attractive to those whose taste does not run in the groove of the large double and massive blooms that have been considered the *beau idéal* of a Dahlia from a florist's point of view for many years past. Mr. Chas. Turner, of Slough, displayed an extensive and comprehensive assortment of the various sections consisting of the best of each in most varied colours. His collections of pompones included all of the more serviceable sorts in each colour; these, too, find favour with those who have to supply a quantity of cut bloom, being more serviceable for that purpose than the larger types. The boxes of single kinds fully represented the best of each shade of colour, and being neatly arranged in bunches formed a pretty effect. To the entire collection a silver-gilt medal was deservedly awarded. Messrs. Keynes, Williams & Co., of Salisbury, likewise exhibited a thoroughly representative collection, consisting of each type above mentioned, with a neatly arranged box of the so-called *Cactus Dahlias*, *White Constance* and *Juarez*, interspersed with their own buds and foliage. A bronze medal was voted to this group. Messrs. Cannell, Swanley, also put up an excellent assortment of blooms of each section, consisting of many dozens of flowers, including several miniature and novel kinds of the single varieties with a good selection of the *Cactus Dahlias*, forming together an interesting feature, which deservedly won the award of a bronze medal. A similar award was voted to Mr. Ware, of Tottenham, and likewise to Messrs. Cheal, Lowfield Nurseries, Crawley, Sussex, for two large and varied selections of large and well-formed blooms. Another collection from Messrs. Rawlings was also among those to which bronze medals were given, a vote of thanks being accorded to Mr. Henshaw, Harpenden, for a selection of pompones kinds. Ten boxes of *Roses* from Messrs. W. Paul & Son, Waltham Cross, constituted a pleasing feature of the meeting also. The best among these were, of H.P.'s, *Etienne Levet*, *Fride of Waltham*, *White Baroness*, *Duchess of Bedford*, *Ferdinand Chaffotte*, *Mlle. Marie Rady*, *Countess of Rosebery*, *Marguerite Dombrain*, *A. K. Williams*, *Xavier Olibo*, and *Boule de Neige*. Of *Teas* and *Noisettes*, *Wm. Allen Richardson*, of a deeper shade than *Mme. Falcot*, was prominent, *Marie Van Houtte* and *Perle des Jardins* also deserving notice. With these were also showed an excellent assortment of herba-

ceous plants (cut specimens), and a box of cut Lilies, the award in this case being a silver-gilt medal. Messrs. Kelway gained the same award for a remarkably fine and varied as well as an extensive collection of *Gladioli*, staged in their usual admirable style.

Fruit and vegetables.—The committee had but few exhibits submitted to them. A first-class certificate was awarded to a new Apple named *Jacob's Strawberry*, grown by Mr. Jacob, of Petworth, and exhibited by Mr. George Bunyard, of Maidstone. It is an early sort of handsome appearance, medium size, conical, beautifully striped, and of excellent quality as regards flavour. It is said to be very prolific, lasts from August till October. Mr. Burnett showed from The Deepdene, Dorking, an Apple under the name of *James Dewdney*, which was considered the same as *Councillor* and *Greenups Pippin*. Mr. Holmes, Aldershot, sent what he called *Fox Hill Plum*, which was thought to resemble *Autumn Compôte* and *Victoria*. Mr. Bowie, of Chillingham, Belford, again sent his new *Red Currant New Defiance*, considered to be the same as *Houghton Castle*. Mr. Gilbert, of Burghley, sent a "Selected Early" Celery which the committee considered the same as the old *Celeri Blanc Hâtif*. Mr. Gilbert also sent a large Melon (11½ lbs.) named *Zamcha*, and other seedling Melons were sent by Messrs. Ross, of Welford, Sparrow, of Chertsey, George, of Putney, but no special notice was taken of them. A large and fine collection of Apples and Pears numbering eighty dishes was sent by Messrs. Paul, of Cheshunt, and a similarly large collection was shown by Messrs. Cheal, of Lowfield Nurseries, Crawley, to both of whom bronze medals were awarded.

INTERNATIONAL HORTICULTURAL SHOW AT DUNDEE.

SEPTEMBER 11 TO 14.

ON Thursday last the second great international horticultural exhibition held under the auspices of the Dundee Horticultural Society was opened. It took place in the large drill hall and its adjoining grounds at Dundee. It is eight years since the previous international show was held at Dundee, and the great success then achieved has caused the present show to be looked forward to with much interest by horticulturists, not only throughout Scotland, but throughout the entire country. With a view to afford the fullest accommodation for the large number of exhibits, the outside areas in the front and at the rear of the suites of halls had been roofed in, and tables bearing the cut flowers and vegetables were ranged along the length of the ground. This arrangement left the interior of the halls wholly for the large display of the plants and fruit exhibits.

The number of sections scheduled was eleven, and the total number of classes was 219. The number of money prizes offered was 742, reaching an aggregate sum of over £1000. In plants 210 prizes, amounting to £470 3s., were offered in 70 classes; in cut flowers there were 52 classes with 156 prizes, amounting to £117 16s.; in fruit 213 prizes in 71 classes, amounted to £366 7s.; and in vegetables £50 were offered in 87 prizes of 29 classes.

The Veitch Memorial trustees offered three of their much coveted medals and the accompanying £5 money prizes—one for the best specimen Orchid in flower, one for the best stove or greenhouse plant in flower, and one for the best two bunches of Grapes selected from the competitive classes.

The exhibition comprised no fewer than 340 competitors, and the total entries numbered 2865. These include 671 for fruit, 339 for plants, 875 for flowers, and 800 for vegetables. The competition in the Grape classes as usual attracted much attention, over 400 bunches being staged besides those exhibited in the various mixed collections of fruit. The judging began early on Thursday morning and was scarcely completed when the exhibition was declared open at 11 o'clock by the Earl of Strathmore, Lord-Lieutenant of the county of Forfar.

As a whole the show may safely be said to have been one of the finest which has ever been held in Scotland for many years. Notwithstanding the general complaint about the smallness of the fruit crop this year, the fruit here of all kinds made a grand display not only as regards quality, but in numbers also, and Grapes were especially good, and in the classes set apart for them the judges must have had an arduous task to perform alike from the number of the exhibits and from the uniformity in regard to high quality. Several of the bunches were very fine, and we noticed one enormous bunch of Syrian which, though somewhat shaken in transit to the exhibition, still presented a magnificent appearance. It weighed 18 lb., and was grown at Monreith, Wigtonshire, the residence of Sir H. E. Maxwell, Bart., M.P.

COLLECTIONS OF FRUIT.—The first prize of £20 for sixteen sorts of fruit (not more than four varieties of Grapes, two varieties of Pines, and two of Melons) was gained by Mr. J. M'Indoe, Hutton Hall, Guisborough, gardener to Sir Joseph Pease, who, as usual, showed a magnificent collection, every dish being in the highest perfection. The second prize of £15 was taken by Mr. G. Johnstone, of Glamis Castle. For the best collection of twelve sorts of fruit a first prize of £15 was carried off by Mr. D. Dickson, St. Andrews. Some exhibits from English gardens were much admired. A collection of dessert and kitchen Apples and Pears shown by Mr. Mackenzie, gardener at Linton Park, Kent, were remarkable for their size and beauty; and Mr. Stewart, Springfield, Maidstone, also had some excellent fruit in the same class. Messrs. Frost and Son, Maidstone, sent a variety of Apples for exhibition, including Peasgood's Nonsuch, Queen Caroline, Lord Derby, and others; they had also some very fine Pears.

The first prize of £15 for 8 varieties of Grapes, one bunch of each, was admirably won by Mr. D. Murray, Culzean gardens, Maybole, who had an exceptionally fine collection of uniform high quality and finish throughout, every bunch being a perfect example of its sort, the colour of the black kinds being particularly remarkable. The second prize of £10 was gained by Mr. Alexander Kirk, Alloa, whose collection was also highly creditable.

THE VEITCH MEMORIAL PRIZE of a medal and £5 for the best two bunches of Grapes was carried off by Mr. Thomas Boyd, Callander Park, Falkirk, and rarely has this Veitchian prize been won by such meritorious examples of a gardener's skill.

The tables of plants in the class confined to nurserymen were exceptionally good. The table extended to 20 feet by 8 feet, and each of the exhibitors took full advantage of this space to make an effective display. The first prize of £20 was awarded to Messrs. Ireland and Thomson, Edinburgh; the second of £15 to Messrs. D. & W. Croll, Dundee; and the third of £10 was obtained by Messrs. Clark Bros., Carlisle. The first prize of £10 for table of plants, open to gardeners and amateurs, was carried off by Mr. J. Hammond, gardener to Sir Wilfrid Lawson, Brayton, Carlisle. The first prize of £20 for twelve stove or greenhouse plants (gardener class) was also awarded to Mr. J. Hammond; the second prize of £15 going to Mr. W. Allison, Monifieth.

The Veitch Memorial prize of £5 and medal for the best specimen Orchid in flower was gained by Mr. E. Boyes, Burnbank, Haddington. The Veitch medal and £5 for the best stove or greenhouse plant was likewise carried off by Mr. E. Boyes, of Burnbank. There was a grand display of fine foliage plants, especially of tree and other Ferns, and conspicuous among flowering plants were some admirable specimens of *Vallota purpurea*. There were several average exhibits of *Lilium auratum*, but they had the misfortune to be dwarfed by a specimen of magnificent proportions in a perfect blaze of flowers. The vegetable class was a most complete one, and all departments were well represented. The first prize of £4 for the best basket containing fifteen kinds was obtained by Mr. Jas. Brown, Crieff, the whole collection shown being remarkable for high quality and judicious selection.

We shall take another opportunity of referring to some of the more important features of the exhibition in our future issues, the foregoing being but a few of the principal exhibits we noted in time for our present issue.

The following is the list of those who officiated as judges:—

FRUIT.—Messrs. A. F. Barron, Chiswick Gardens, London; M. Dunn, Dalkeith Palace; Arch. Fowler, Castle Kennedy; R. Westcott, Raby Castle, Darlington; John Webster, Gordon Castle, Fochabers; Thos. Lunt, Ardgowan; and James Morrison, Archerfield.

PLANTS.—Messrs. B. S. Williams and T. Baines, London; R. Lindsay, Edinburgh; and J. Routledge, Freeland.

CUT FLOWERS.—Messrs. John Downie and James Greene, Edinburgh; R. P. Brotherston, Tynninghame; and Geo. Wyness, Usan.

VEGETABLES.—Messrs. John Browning, Dupplin Castle; Peter Whitton, Methven Castle; Thos. Ormiston, Alloa Park; and A. M'Kinnon, Scone Palace.

AN ENGLISH GARDEN TWO CENTURIES AGO.

The following notes have been sent to the *Pall Mall Gazette* by Miss Jekyll, Munstead:—

At the end of an article thus headed, it was suggested that it would be interesting to know which of the flowers mentioned by Evelyn as "in prime or yet lasting" in the month of August were still in cultivation in English gardens or could be recognised under more modern names. The following notes take the flowers in the order of Evelyn's list:—

ANAGALLIS LUSITANICA.—It is doubtful if there is one now in cultivation under this name.

ASTER ATTICUS.—The Asters of the botanical writers of Evelyn's time and a little earlier appear to be our *Erigerons*. *Aster blattaria* is not recognisable. *Aster atticus* is figured by Gerard, but appears to be a poor plant, unworthy of a place in a garden. Gerard also gives *Aster italorum*, which would be our *Aster Amellus*, perhaps the only true Michaelmas Daisy then frequent in gardens; the many kinds we have now, being of American origin, would have been introduced since Evelyn's time. The name Michaelmas Daisy is also modern, the plants known botanically as *Aster* to the old writers being always popularly called Starworts.

SPANISH BELLS is a name no longer used, and the plant cannot be identified.

BELVEDERE is also now unknown.

CAMPANULA and **CLEMATIS** are in every garden. Of the Bellflowers many beautiful kinds have been introduced within the last hundred years, but the one here referred to is probably *C. pyramidalis*, a very tall autumn blooming kind, and an old inhabitant of English gardens, introduced towards the end of the sixteenth century. The Clematis might be the sweet-scented white *C. Flammula*, or the original purple *C. Viticella*, the parent of many of our fine varieties.

CYCLAMEN VERNUM, a sweet-scented kind, is in all good collections of choice hardy plants.

DATURA TURCICA is now *Datura stramonium*.

ELIOCHRYSON would be *Helichrysum*, but none of the *Helichrysms* of modern cultivation, which are American and Australian annuals. The old *Eliochryson* is probably Goldilocks (*Lynosyris vulgaris*).

ERYNGIUM PLANUM and **E. AMETHYSTINUM** are common garden favourites that have retained their old names.

GERANIUM CRETICUM.—Numbers of handsome Cranesbills were and are in cultivation, but it is difficult to identify the one here meant. *G. triste* is also doubtful, but it may be the night-scented *Pelargonium triste*, a greenhouse plant introduced early in the seventeenth century.

YELLOW STOCKS are described by Parkinson ("Paradisi," p. 262) as rarities.

HIERACEUM ALPINUM is known in gardens and botanical collections, but a more general favourite is the finely coloured *H. aurantiacum*.

TUBEROSE HYACINTH now popularly *Tuberose* (*Polyanthus tuberosa*) is common in greenhouse cultivation.

LIMONIUM must be Sea Lavender (*Statice Limonium*), frequent in gardens.

LINARIA CRETICA is not now grown under that name, but the large Toadflax family includes many valuable garden kinds.

LYCHNIS.—The old authors give the same kinds that we have in general cultivation; the one meant is probably the fine scarlet *L. chalcidonica*.

MIRABILE PERUVIANA is the well-known Marvel of Peru.

YELLOW MILLEFOIL.—This may be any one of the several kinds of yellow-flowered *Achilleas*, but is most likely either *A. aegyptiaca* or *A. Ageratum*.

MARACOC is the blue Passion Flower.

AFRICANUS FLOS is the double African Marigold.

ASPHODELS.—It is difficult to know what this means. The Asphodels as we now know them are early summer-flowering plants, the only autumn-blooming kind, so-called, being the native Bog Asphodel (*Narthecium ossifragum*).

COLCHICUMS, our Meadow Saffrons, are favourites now as then; Parkinson describes nineteen varieties. Some of the later developments of this useful autumn flower are of great size.

LEUCOION.—The name *Leucojum* is now used for a family of spring-flowering bulbous plants, the Snowflakes, but the *Leucoion* of Evelyn's time was a Stock—or, as it was then called, Stock Gilliflower. One kind was called the Melancholic Gentleman, and is described as of a sullen yellow colour.

AUTUMNAL HYACINTH.—Now unknown, or not generally cultivated. We have a fine autumnal Hyacinth in *Galtonia candicans*, but it is of quite recent introduction.

STARWORT may be a repetition of the *Aster atticus* named above, or it may be *Aster Amellus*.

DAISIES.—What Daisies? Not the large garden varieties of *Bellis perennis*, for they are spring flowers. The old writers give only Great Daisies, our field Ox-eyes (*Chrysanthemum Leucanthemum*) and Little Daisies (*Bellis perennis*), and, curiously, they include with them *Globularia*, under the name of Blue Italian Daisy. Evelyn's Daisies, flowering in August, are therefore an unsolved puzzle.

GERANIUM NOCTE-OLENS.—No kind is now known by that name.

LARKS-HEELS, now Larkspurs, are our common annual kinds.

LOBELLS (CATCHFLY).—The species in this case cannot be determined.

THLASPI CRETICUM would be our annual Candytuft (*Iberis odorata*).

ROSEMARY.—So great and worthy a favourite never changes either in name or popularity.

MUSK ROSE.—A fine single white rambling Rose, very little in cultivation, but well deserving a place in every garden.

SPANISH JASMINE is probably the common white; yellow Indian Jasmine would be *J. revolutum*.

AGNUS CASTUS is *Vitex Agnus Castus*, a hardy shrub not much grown.

This list of plants, which we take to be not less than fairly typical of a well-stocked garden coming, as it does, from so keen a cultivator and lover of plants, makes us see at a glance how enormously our gardens have gained in hardy flowers alone in wealth of beauty since Evelyn's time. To this meagre list of August flowers we now add the following important families, many of them in rich variety both of species and garden development: *Acanthus*, *Alstroemeria*, *Anemone japonica*, *Coreopsis*, summer *Chrysanthemums*, *Echinops*, *Fuchsia*, *Hydrangea*, *Gladiolus* *Hele-*

nium, Helianthus, Epilobium, Oenothera, Pentstemon, Rudbeckia, Phlox, Tritoma, Verbena, China Aster, Zinnia, Tigridia, Tea Roses, Erica, Dahlia, American and Japanese Lilies.

INTERNATIONAL FORESTRY EXHIBITION, EDINBURGH.

THE list of awards of the jurors of this exhibition has just been published. The awards consisted solely of medals, gold, silver, and bronze, besides diplomas and commendations. The exhibitors in the British section took the largest number of awards, which included nine first-class gold medals, four second-class gold medals, fifty-one silver medals, and fifty-three bronze medals. The following is a list of the awards made to exhibitors of trees and shrubs, &c.: Messrs. J. Veitch & Sons, King's Road, Chelsea, take a gold medal of the first class, for a collection of living specimens of rare and ornamental trees, and a silver medal for a collection of dried specimens. Gold medals of the second class are awarded to the Lawson Seed & Nursery Company, Edinburgh, Messrs. James Dickson & Sons, Newton Nurseries, Chester, and to Messrs. T. Methven & Sons, Edinburgh, for collections of living trees and shrubs. Silver medals are taken by Messrs. Little and Ballantyne, Carlisle, Ireland & Thomson, Edinburgh, and Messrs. Cunningham, Fraser, & Co., Edinburgh, for collections of trees and shrubs. Silver medals are also awarded to Mr. J. McLaren, Hopetoun, for specimens of wood and growing trees; Mr. Brotherston for his large herbarium of native and exotic Willows; to Messrs. B. Reid and Co., Aberdeen, for a collection of trees and shrubs; and to Mr. J. Barrie, Stevenston, Devonshire, for collection of tree seeds and cones; to Messrs. Mackenzie and Moncur, Edinburgh, for conservatory; to Mr. M. Jackson, Perth, for photographs of trees; and to Mr. McKenzie, Morton Hall, Edinburgh, for a dendrometer. The Scottish Arboricultural Society take a gold medal of the first class for collection of exhibits from British forests.

OBITUARY.

WE announce the death, which took place on Wednesday, of the eminent botanist, Mr. GEORGE BENTHAM, C.M.G., F.R.S., F.L.S., at the advanced age of 83. Mr. Bentham has for so many years been one of the most laborious workers in the field of botanical science, that by his death botany has suffered an irreparable loss. Mr. Bentham had long reached the distinction of being the highest authority in regard to systematic botany, and that noble work, the "Genera Plantarum," which was carried out in company with Sir Joseph Hooker, will be a lasting monument to his industry and high attainments. It is over twenty-two years since this great work was commenced, and its joint authors have happily been spared to see its completion only a few months ago. It is not only in connection with this, his chief work, that Mr. Bentham's name will be permanently known in science, for there is scarcely a family of plants or the flora of a country that he has not studied. One of his earliest works was that excellent treatise on the "Flora of the British Isles," which is to this day unsurpassed in its way. The "Flora of Australia" again occupied Mr. Bentham's best days, and for our present knowledge of the floras of South America, Mexico, Africa, India, and other countries we are in a great measure indebted to him. For many years he had worked daily in the herbarium in the Royal Gardens, Kew, and until quite recently was engaged in botanical research.

Propagating Evergreens.—Many kinds of ornamental leaved shrubs may be easily increased from cuttings at this time of the year. Laurustinus, Laurels, Aucubas, and Evergreens of a similar nature will form roots with considerable freedom if the right kind of wood is chosen and a proper position and soil selected. The north side of a hedge is the best place, as the cuttings are

there sheltered from sun and to a great extent from drying winds. The right wood is that of the current season, making the cuttings with from three to four joints, inserting them firmly, leaving two leaves only out of the soil. The success obtainable much depends on the character of the soil, which should be rather light and sandy; natural deficiencies should therefore be remedied. For stiff soils, wood or even coal ashes, river sand or old soil from the potting bench will work the desired end.—J. C. B.

QUESTIONS.

5246.—**Wasps attacking Elms.**—The other day I perceived the sickly state of two or three fine Elm trees in our avenue planted about 55 years since. On examining them closely I saw that the stems and branches as far as I could see were punctured with holes, and that there were hundreds, perhaps thousands, of wasps busy in them, two or three in one hole, half a dozen, perhaps eight or ten, in another, extracting the sap. I have never seen this before, but my woodman tells me that he recollects seeing an Elm in Gloucestershire nearly two centuries old that had been destroyed in a like manner. The wasps attack the most flourishing trees in which they find the most sap. I am trying to save my trees by washing the stems with a mixture of soot and lime in water. The wasps do not like this, but as soon as the bark is dry, they set to work again. If any of your correspondents will tell me how to save the trees from their attacks I shall be much obliged to them.—HARRY VERNY, *Claydon House, Bucks.*

5247.—**Failure of Peach trees.**—I should like the opinion of any reader as to the reason of my Peach trees losing some of their limbs at this time of the year. They carried a nice crop of fine fruit, ripe the latter end of July, and since the fruit was gathered some of the branches have cracked and died off.—L. H.

5248.—**Linaria Peloria.**—The description of *Linaria Peloria* in your last number makes one desirous to possess it, but I do not see it in any catalogue. Will any reader kindly say where it is to be obtained?—A. CONSTANT READER.

5249.—**Elaeagnus japonica.**—Will any reader tell me what should be the treatment of *Elaeagnus japonica* during the winter? I brought a small plant of it in the spring from Pallanza, Lago Maggiore, where it entirely clothes the walls and trellis. I have planted it here, at an elevation of 730 feet above the sea level, against a south wall and it has done well hitherto. Should it be protected by matting in the winter and its roots covered with straw or ashes? The gardener from whom I got it described it as "*Malto rustico*."—E. D. THOMAS.

5250.—**Cutting off Strawberry runners.**—I am anxious to learn if it has been experimentally proved that the runners of Strawberry plants should be removed when in the pots for forcing; my experience suggests that doing so simply induces other runners to grow and push out instead of the formation of fruiting crowns. There is an inherent and determined desire in all things having life to preserve and propagate their species, and for doing so the Strawberry sends into the world its tender progeny. When these little plantlets are rooted and safe, it may perhaps turn its attention to the useful and ornamental, and then prepare its resources for giving pleasure and enjoyment to its protector and preserver by yielding him a generous supply of both flowers and fruit.—S. W. S.

Ironstone soils.—That iron in certain proportions is beneficial to vegetable as to animal life and beauty goes without the writing, and one amateur in particular, whom I have the pleasure to visit, assures me that the vigour of *Rhododendra* and many other flowering shrubs and herbaceous plants which grace his garden is in a great measure due to his garden being on the ironstone formation. That iron has some influence on the colouring of flowers is proved by the well-known effect of iron filings when added to the soil in which pink *Hydrangeas* are grown. Sometimes we are told that the red or ruby colouring of leaves and leaf-stalks, &c., is due to salts of iron, and it has more than once occurred to me to ask some skilled chemist how we can best utilise iron as an aid to plant culture.—F. W. B.

The world's Potato crop.—Although Potatoes this year are most plentiful and remarkably free from disease, yet every housewife is complaining of the price. It is when disease threatens the crop that everyone is obliged to sell, and so Potatoes are cheapest during bad seasons rather than during good ones. According to official statistical reports, the average annual crop of Potatoes throughout the world is as follows: Germany, 235,000,000 metrical hundred-weights; France, 113,000,000; Russia, 110,000,000; Austria, 75,000,000; the U. S. of America, 47,000,000; Ireland, 38,000,000; Great Britain, 26,000,000;

Belgium, 23,000,000; Sweden, 16,000,000; Holland, 15,000,000; Hungary, 14,000,000; Italy, 7,000,000; Norway, 6,000,000; Denmark, 5,000,000; the Australian colonies, 3,000,000; Portugal, 3,000,000; and Spain, 2,000,000 metrical hundred-weights—grand total, 730,000,000 of hundred-weights.—B.

LATE NOTES.

Name of insect (*Ignoramus*).—The insect you send is not a hornet, but the giant *Sirex* (*S. gigas*).

The Thames Bank Iron Company.—We are requested to state that Mr. Dunbar has retired from this company.

Senecio pulcher.—Hailing from the north, I wish to supplement Mr. Archer-Hind's note about *Senecio pulcher*, and to say it does equally well up here. I have a plant with four stems, all blooming abundantly. I call it a beautiful thing, and think "*S. W.*" has never seen it in perfection.—A. R. Windermere.

Single Dahlias (*E. Frampton*).—We think the single-flowered Dahlias you send are excellent, but we cannot say that they are superior to the named sorts of similar colours. You should submit them to the next floral committee of the Royal Horticultural Society at South Kensington. The seedling *Phlox* from *Roi des Roses* is a beautiful one, and well worthy of a name.

Shakespeare's Mulberry.—I enclose you a few leaves of a seedling Mulberry which came from Shakespeare's tree. I was at Stratford about fifteen years ago, and while standing under the tree a fruit fell on my head, which I took away. From this I grew three seedlings, one of which produced foliage like the leaves enclosed, the others the ordinary plain leaf. Is this an unusual sport? The trees have not yet borne fruit.—S. W. S.

Mignonette seed.—"J. G. K." (p. 198) speaks of the difficulty of getting *Mignonette* seed true. He has scarcely a chance of it from the seedsmen; but why, when he meets with a first-class plant, does he not strike cuttings? I always do so, and, if I want a pinch of the seed, keep a pot plant isolated in the greenhouse. I could send you just now splendid heads; cuttings were taken yesterday.—A. R. Windermere.

Hibiscus militaris.—I send you flowers of this shrub, which, I believe, does not often flower in England, but having lived through the last mild winter, it has been flowering continuously, but sparingly, and making no show by reason of its short stalks, and the handsome foliage is useless for gathering, as it fades directly in water. I do not consider it any acquisition in a garden. It was raised last year from seed from Mr. Thompson, of Ipswich.—A. HOWES, *Bilton Rectory, Great Yarmouth.*

* A pretty plant, the drooping flowers being bell-shaped, with a recurved rim, and of a pleasing soft rose-pink veined with carmine.—Ed.

Carpeting Anemone beds.—As Anemones go to rest in the end of June and begin their new growth early in August at latest, it is not easy to see what could be used as a carpeting plant during that interval without adding considerably to the soil covering of the tubers of the Anemones themselves. Nothing could be plucked if this was done. Any available plants in pots could be utilised. Failing this, some quick growing annual—*Virginian Stock*, for instance—sown shortly before the Anemones went to rest would be the best thing to use.

The Broomrape.—In the last volume of *THE GARDEN* (p. 495) "*E.*" in alluding to the genus *Neottia*, says: "These are leafless plants, with brown stalks and flowers, and are supposed to be saprophytic, i.e., to grow on the decayed roots or stems of other plants, as do the *Monotropas* and *Orobanchas*." In corroboration of a statement I made in reply to this (p. 544 of same volume) I now send you specimens of the greater Broomrape (*Orobancha major*), showing the parasitical attachment to the living roots of our common Gorse or Furze. It will thus be seen that at least this species subsists on living, not dead matter. I can also prove to you that *O. rubra* derives its nourishment from the living roots of the wild Thyme. This morning I measured a specimen of the greater Broomrape, which was 37 inches in height and bore no less than eighty seven flowers. In this district it is almost confined to the Gorse, and is very rarely found, although Bentham says it is most common on the Furze. You will notice that, as in our native Orchids, the young plant is produced from a bulbous root formed close to the stem of this year's plant.—A. D. WEBSTER.

* Mr. Webster's specimen clearly shows the parasitical nature of the Broomrape.

Names of fruits.—A. C. H. O.—Next week.—J. P.—Chautmont; South Devon Apple is Kerry Pippin; Pear is Jargonelle.—W. F.—Your Grapes show a bad case of scalding.

Names of plants.—W. F.—1, *Gentiana asclepiadea*; 2, *Veronica longifolia*; 3, species of *Oncidium*; 4, *Quamoclit coccinea*.—E. *Theridil.*—*Davallia Nova-Zelandica*, but cannot be certain without seeing matured fronds.—J. W. R. (*Harrogate*).—*Pittosporum undulatum*, *Colutea arborescens* (yellow flowers).—E. L. *Thomson*.—*Erigeron mucronatus*; tolerably common in gardens now.—*Subscrib.*—*Achillea Ptarmica* n. pl.—C. *Frisbo*.—*Gentiana Pneumonanthe*.—J. W.—*Veronica longifolia*; other is *Saponaria officinalis* n. pl.—S. W. S.—*Catacetus tridentatum*.

No. 670. SATURDAY, Sept. 20, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE."—Shakespeare.

PERENNIAL SUNFLOWERS.

YELLOW Composites are inevitable in the herbaceous borders during August and September. They are at present very showy here, and the Sunflowers take the lead both in height and the size of their flowers. Only two annual kinds are grown, the one being the lemon-coloured variety of the large *Helianthus annuus*, and the other a very useful much-branched kind with bright yellow flowers 3 inches across and a jet-black disk. It is named *H. cucumerifolius*, and I had the seed from Mr. W. Thompson, of Ipswich. Of perennial kinds of *Helianthus* I grow many; the first I will mention is one which I have distributed largely under the name of *H. doronicoides*, by which I received it. Sunflower names are very difficult to determine, but now Dr. Asa Gray has published his volume on the "North American Composites," we may hope to know more about them. However, this name is certainly wrong; the plant to which I refer is one of the earliest and finest of its class. It grows 6 feet high, bearing a profusion of bright yellow flowers, which open for a day or two without the outer rays being fully expanded. They are more than 3 inches across, with a small brown and gold centre. The stalks are slender and numerous and the habit of the plant elegant; it flowers for two months from the end of July. It may be *H. trachelifolius* of Asa Gray, but if it is I have never seen it rightly named. On the other hand, *H. doronicoides* of Asa Gray is a very coarse growing and late flowering kind, with large ugly leaves, and rising 9 feet or 10 feet high, resembling above ground the Jerusalem Artichoke (*H. tuberosus*), of which it is said to be a variety; but the roots are not tuberous, though thick, and increase by long slender stolons. The plant is worse than worthless for ornamental purposes, and I have long expelled it. Then there is the plant commonly known as *H. decapetalus*, though 12 or 13 is the usual number of its external rays. It flowers early in August. The flowers are small, but produced thickly, and it is not a bad garden plant, being about 5 feet high at most. Still, I am not certain of its identity with Asa Gray's plant of that name, especially when we are informed by him that the well-known *H. multiflorus* is only a garden form of it, a statement which we should hardly believe on less authority than his. *H. multiflorus* is perhaps the best late perennial Sunflower. Its form varies so much that we should expect it to be a garden development, but it differs widely in appearance from the type. It is too well known to need description; it has double forms with and without external rays, and often produces double and single flowers on the same plant. No plant responds more readily to good cultivation. My finest plants are those of five months old; taken as small rooted single shoots in April, and planted in deep rich soil in a sheltered, but sunny, place these grow 8 feet high, branching all the way, and being covered with flowers from within 2 feet of the ground. Some of the flowers of these plants

so treated as annuals are 5 inches across. I cannot observe any tendency on them to change their face according to the movement of the sun, as they are said to do. *H. giganteus* and *H. Maximiliani*, closely allied in appearance, are distinguished by their narrow lanceolate leaves, their great height, the former reaching 10 feet, and their narrow cupped rays somewhat turned outwards at the end. Neither of them is a first-class garden flower. The same may be said of *H. mollis*, with ovate, soft downy leaves; of *H. divaricatus*, an inferior edition of the species first described, and set down as *trachelifolius*; and *H. lævigatus*, a tall late-flowering kind with thin black stalks. *H. strumosus* is a better plant, the colour of the flowers being rich with a tinge of orange. It is 7 feet high, with moderately large flowers, and leaves broad at the base with long narrow points are produced all along the stalk. *H. occidentalis* is new to me this season, having been given to me by Mr. W. Thompson. It is dwarf, neat, and early flowering, growing not more than 2 feet high, with flowers about 2 inches across. Of *H. lætiflorus* I have two forms, one having green stalks, the other black. The latter is by far the best; its habit is stiff and well branched, and it flowers quite to the end of the season, never becoming shabby. It is one of the best of the genus, and increases far more slowly than most of them, forming new crowns sparingly in a compact clump. *H. angustifolius* is very neat, but late, and does not increase at all. It has the look of an annual, but continues to come up in the same spot. Here it seldom matures its flowers, being cut off by frost, but in warmer gardens it would be good. *H. orgyalis* may be worth growing for its remarkable ribbon-like leaves, but the flowers are poor. *H. rigidus*, the best of all the tribe, belongs rather to summer than to autumn plants. It likes a warm sandy soil. If the season and soil are wet, the flower-stalk damps off, and the buds turn over and wither. I never could assign any other cause for this failure in flowering, or find any cure for it, though I have often been consulted about it. Besides these I have several other Sunflowers which need not be enumerated, having already mentioned more than any one garden can require, unless variety is made an important object. Most of the perennial Sunflowers require to be frequently divided and moved, as they run rapidly, and if the outer parts are taken off to keep the plant within bounds, the central clump will soon deteriorate, even though supplied with top-dressing.

C. WOLLEY DOD.

Edge Hall, Malpas.

Gladioli in dry weather.—In consequence of the destructive drought here which lasted (with hardly a shower to lay the dust) till September 6, the blossoming of Phloxes, Carnations, and almost all other late summer flowers has been a complete failure; and amongst Perpetual Roses there has been but a small flower here and there since the July flowering was over. Planted amongst Roses, in deep and very rich soil, a small collection of Gladioli has been uninjured all through the long drought, although they were not even watered, as all available watering had to be reserved for more delicate plants. Their brilliant colours and beauty of form place them amongst the most satisfactory of late summer and autumn flowers, especially for dry seasons and a gravel subsoil. As in many cases there is a succession of flower-spikes and also side branches to the flower-stems, the blossoming season lasts for a considerable time. Amongst species of *Gladiolus*, *G. Saundersi* is well worth growing, from its dwarf habit and the peculiar shape of its pretty red and white blossoms. Here

it is quite hardy on rockwork, and would probably be equally so as a border plant.—C. M. OWEN.

PLANTS IN FLOWER.

Lilium auratum.—A finely flowered stem of this Lily has been sent to us by Messrs. Carter, High Holborn, who received it from one of their customers in Surrey. The stem, a fasciated one, carries twenty-seven flowers, twenty of which are fully expanded. The plant had been grown in the open border.

Sheffieldia repens.—Miss Owen sends from her garden at Knockmullen, Gorey, Ireland, some flowers of this pretty little alpine, a kind but little known. It belongs to the Primrose family, and is very dwarf, the small wiry stems forming a flat tuft, at this season profusely studded with tiny white flowers. Though a New Zealand plant, it is hardy in this country planted in a drained spot of the rock garden.

Streptosolen Jameoni.—Some fine flowering sprays of this showy greenhouse plant, which we figured a short time since in THE GARDEN, have been sent to us by Messrs. Cancell & Sons, Swanley, in order to show what a serviceable plant it is for flowering at this season. Some of the planted-out specimens in the Swanley Nursery are as much as 3 feet in height and covered with clusters of bright orange-red flowers.

New Dahlias.—A few new sorts of show and fancy Dahlias have been sent to us by Messrs. Rawlings, of Romford. The brightest show variety is one named Mrs. Douglas, a perfect flower glowing scarlet in colour. The best of the fancy class include W. G. Grace, C. Turner, W. Dodds, T. J. Saltmarsh, and H. Turner. Two very pretty pomponé varieties are sent; one named Jessie McMillan is curious in having the pink centre encircled by buff. T. Moore is also a handsome reddish buff sort.

Semi-double Dahlia.—A flower of a seedling Dahlia has been sent to us by Mr. D. T. Fish which is not only pretty, but distinct. Instead of one row of ray florets, as in ordinary single Dahlias, there are secondary florets springing from the primary ones, and these stand up round the centre like a fringe, and being of the brightest crimson-scarlet are very showy. This is not an ordinary semi-double Dahlia, which has two or more distinct rows of florets; hence we consider it quite distinct, and one which will, perhaps, lay the foundation for a separate race.

The Neilgherry Lily.—Of this noble and scarce Lily there is now a marvellous display of flowering specimens in Mr. Bull's nursery at Chelsea, hundreds of plants there being in full flower. *Lilium neilgherrense* is without doubt one of the finest of the whole genus, and though it is not hardy it is extremely valuable for greenhouse culture, as at this season it produces its noble blossoms when conservatory flowers are not plentiful. The plants in Mr. Bull's nursery range from 1½ feet to 3 feet in height, and the flowers are tubular, from 9 inches to even a foot in length. The colour is creamy white and the texture so thick and firm as to render the flowers quite wax-like, or rather give them the appearance of being chiselled out of ivory. A single specimen of this Lily in full flower is a handsome object, but when groups of as many as a hundred plants are seen together of varying heights and with the blooms in several stages of expansion, the effect is indescribably fine. This Lily is of free growth and easy culture, and it is to be hoped that now the bulbs have been imported largely it will not be so seldom seen as hitherto in conservatories in autumn.

Fuchsia triphylla.—A very pretty and distinct species of Fuchsia is now flowering at Kew under the above name, and one which is worthy of a place in every conservatory and greenhouse. It is a small imitation of *F. splendens* in general appearance, with characters of its own in the arrangement of its medium-sized olive-green foliage in whorls of three along the stem, and in the rich scarlet of its long pendent flowers, which are borne on the ends of the curving branches and hang down in bunches like handfuls of ear-drops. We have met with the same plant in Messrs. Henderson's nursery at Maida Vale, but have never seen it in such perfection as it has been grown to at Kew. A free grower, and, like all Fuchsias, capable of being increased from cuttings

at a rapid rate, this pretty Fuchsia ought to become well known. In the hands of the grower for market we suspect this plant would prove "a good thing" for general decoration, as it is a little out of the way of the ordinary Fuchsia, and ornamental enough to catch the popular eye.

Autumn flowering bulbs.—Hardly have the summer flowers passed away before the Meadow Saffron (*Colchicum autumnale*) begins to push up its rosy purple flowers. The earliest of the autumn Crocuses, too, are just now beginning to make a show, although for the last fortnight or so an odd one here and there has opened its beautiful petals to the noonday sun. Among the more beautiful of the Crocuses are *C. Scharojani*, pure bright orange, and *C. vallicola*, whose flowers are straw-coloured or nearly white. The various autumn Cyclamens, too, are very beautiful in a semi-wild condition just now. The present mode of growing bulbs in small clumps of say a dozen scattered about at wide intervals has already had its day, and no doubt much can be said in its favour; but to see them so as to give an adequate idea of their beauty in nature, they must be planted by the hundred a few inches or so apart, just as we see the Bluebells in our own woods, and where one can hardly step without treading them under foot.

Dichrotrichum ternatum.—This plant may be employed for covering moist walls or unsightly woodwork inside stoves or warm ferneries in the same way as the *Marograavias* and *Pothos* are sometimes used. Like these plants, too, the above grows rapidly, and is furnished with roots along its ascending stems, with the aid of which it clings to any moist surface. There is a plant of it growing up some boards in the Begonia house at Kew, and, in addition to the rather handsome green foliage and remarkable habit of the stems, the flowers are somewhat attractive, being borne on stalks a foot long, on the ends of which they are clustered, about a score of deep red tubular flowers an inch long, and not unlike the flowers of *Phygellus capensis*. The Kew plant has several bunches of these flowers open just now, with more to come. *D. ternatum* was introduced by M. Jacob Makoy, of Liege, in 1870, but has never found much favour as a garden plant. Grown, however, as it is at Kew, there is much to recommend it both in the usefulness of its habit and dark green leaves and the prettiness of its flowers.

Krätzer's Lily.—This is without doubt the most chastely beautiful of the many lovely varieties of *L. speciosum* (*lancifolium*), and one, moreover, that is the least known in gardens generally. None of the varieties bear such exquisitely formed flowers, so perfectly symmetrical, and of such snowy whiteness. It is infinitely superior to what is known as the white variety of *L. speciosum*, which in reality is not pure white, but slightly tinged with pink, and invariably has pinkish mid-ribs at the back of the petals. Krätzer's Lily is pure white save the medial ribs to each of the petals, which form a green star. At present this Lily is in great beauty in Mr. Bull's nursery at Chelsea, where there are hundreds of flowering specimens of it, which, whether interspersed with the coloured varieties or forming groups by themselves, are surpassingly beautiful. As a conservatory Lily at this season it is invaluable, and its snowy blossoms are peculiarly suitable for bouquets, wreaths, &c. Every known variety of *L. speciosum* may be seen in Mr. Bull's nursery, the majority of which are in bloom. Among the more noteworthy besides Krätzer's is that named *rubrum superbum*, by far the best of the dark flowered varieties, the colour being a deep crimson-carmine with an edging of white.

Dioscorea retusa.—A *Dioscorea* with ornamental flowers is quite exceptional; the chief characters by which these plants are known to us consist in the value of their tuberous rootstock as food to the natives of various tropical countries, and which are called Yams, and the variegation of the foliage of some of the species, which has led to their being cultivated as ornamental climbers in our stoves. *D. retusa* is, however, a graceful

and pretty flowering plant, as is shown by the specimen now in flower in the Begonia house at Kew. Like the other members of the genus, *D. retusa* is a climber, and has dark green digitate leaves, from the axils of which grow long, pendent clusters of flowers, which in outward appearance are not unlike some of the *Polygonums*. The individual flowers are small, and are almost hidden by the pointed bracts, which are nearly white. A rather sweet odour arises from the flowers, which, together with the profusion in which the ringlet-like racemes are borne on the plant, makes it a pretty object for draping a pillar, or when trained on a twiggy portion of a Holly branch, as it is at Kew. We remember having seen a handsome specimen of this plant at the Regent's Park exhibitions on several occasions, the exhibitors being the Messrs. Veitch, who introduced the plant to cultivation about fifteen years ago. It is a native of South Africa, where it was collected by Mr. Cooper whilst travelling in search of novelties for the collection of the late Mr. Wilson Saunders.

CALIFORNIAN CONIFER FORESTS.

AMONG the many wonders impressed upon the traveller to the far West is that of the imposing grandeur of the giant tree growth of the Sierra and coast ranges, where grow some of the noblest and most beautiful trees in the world. Here is the home of the numerous coniferous trees, which through the enterprise of such dauntless men as Douglas, Jeffrey, and Lobb, have been transplanted to beautify our European gardens and woodlands. But the juvenile growth of even the largest of these Californian trees in British gardens can give but a poor idea of the magnificence of those native groves where the *Abies Douglasi* reigns king of the Spruces, and *Pinus Lambertiana* king of the Pines, each with towering boles as much as 300 feet high and 20 feet in diameter.

On the very summit of the Sierra Nevada the vegetation is not luxuriant; there, as elsewhere on high mountain chains, is the frost that burns and the wind that sears. When you see a solitary Pine that has been bold enough to plant itself among the boulders and rocks of the high summits, it is usually so contorted that it looks as if inhabited by demons; while here one has succumbed to the enemy, and you see a few blanched branches sticking from a great, dead, barkless base, lapped over the earthless granite. But go a little lower down, and most probably you will find a noble group of *Picea*, startling, from the size and height of the trunk, though looking much tortured about the head by the winds that surge across these summits—the mast-head of the continent. Snow falls early and falls deep on the Sierras, and the roots of the higher trees are often covered with it to a depth of from 6 feet to 25 feet. Near the rail, and near frequented places, thick stumps of Pines, 6 feet to 15 feet high, may be noticed; these are the trees cut down when the snow is high and thick and firm about the lower part of their stems. But if the nights are bitterly cold, the sun is strong in the blue sky far into the winter months, so that the snow is melted off the tree tops, and the leaves of the Pines live, in golden light, long into the winter. All the Pines that grow near the summit must resist the most piercing cold.

To the flanks of the western slopes of the great chain of the Sierras one must go to see the noblest trees and the richest verdure. There every one of thousands of mountain gorges, and the pleasant and varied passes of every vale that runs with its streams and rivers, and from top to bottom of every one of the innumerable hills, is densely populated with noble Pines and glossy Evergreens—an ocean of huge land waves, over which the spirit of tree-life has passed, creating giants.

The inviting openness of the Sierra woods is one of their most distinguishing characteristics. All the species stand more or less apart in groves or small, irregular groups, enabling one to find a way nearly everywhere, along sunny colonnades and through openings that have a smooth, park-

like surface, strewn with brown needles and burrs. Now you cross a wild garden, now a meadow, now a ferny, willow stream; and ever and anon you emerge from all the groves and flowers upon some granite pavement or high, bare ridge, commanding glorious views above the waving sea of Evergreens far and near.

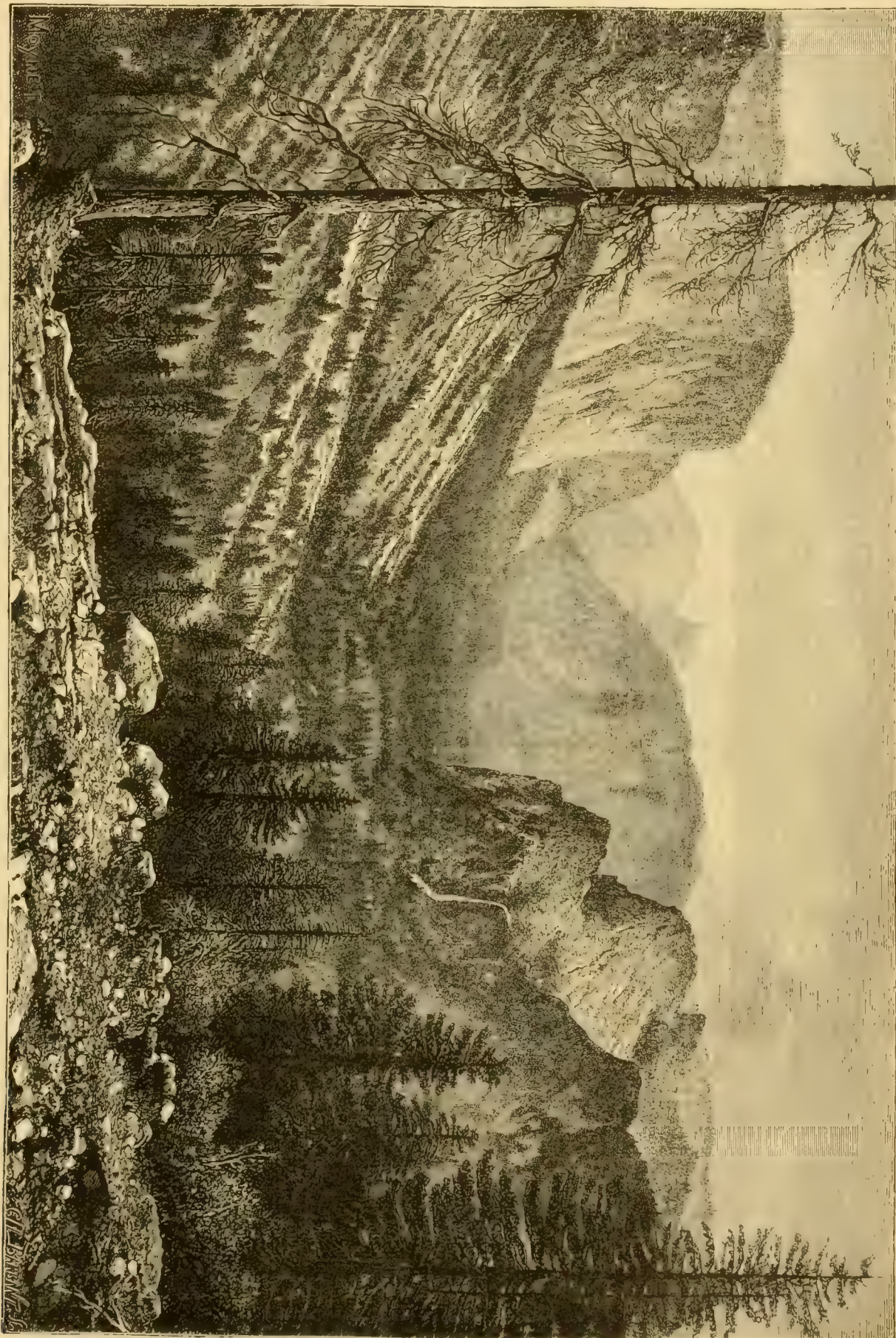
One would experience but little difficulty in riding on horseback through the successive belts all the way up to the storm-beaten fringes of the Alps. The deep, precipitous cañons, however, that come down from the axis of the range at intervals of eight or ten miles cut the belts more or less completely into sections, and prevent the mounted traveller from tracing them lengthwise.

Crossing the level treeless plains of the Sacramento and San Joaquin from the west, on reaching the Sierra foot-hills you enter the lower fringe of the forest, composed of small Oaks and Pines, planted so far apart that not one-twentieth of the surface of the ground is in shade at clear noon-day. After advancing fifteen or twenty miles, and making an ascent of from 2000 feet to 3000 feet, you reach the lower margin of the main Pine belt, composed of the gigantic Sugar Pine (*P. Lambertiana*), Yellow Pine (*P. ponderosa*), Douglas Spruce (*Abies Douglasi*), Incense Cedar (*Libocedrus decurrens*), and Sequoia gigantea. Next you come to the magnificent Silver Fir belt, and lastly to the upper Pine belt, which sweeps up the rocky acclivities of the Alps in a dwarfed, wavering fringe to a height of from 10,000 feet to 12,000 feet.

Those who have not visited the high lands of California can have no idea of the size and majesty of the trees. It is a mistake to suppose the Sequoia (*Wellingtonia*) is such a giant among them; several grow nearly or quite as high, and it is very likely that in such a climate all the Pines grown in Britain would attain extraordinary dimensions.

There can be no doubt that climate is almost the sole cause; soil has very little to do with it. It has frequently been noticed that trees luxuriate where there is not a particle of what we call soil, and, indeed, in places where 25 feet or so of the whole of the earth had been washed away by the gold-miners. A bright sun for nearly the whole year and a sufficiency of moisture from the Pacific explains the matter. This should draw our attention to the fact that in ornamental planting, and especially in the planting of coniferous trees, we pay far too much attention to supplying them with rich and deep soil and far too little consideration to the capabilities of the climate in which we have to plant.

Chirita Mooni.—Introduced from Ceylon nearly fifty years ago, and after a short reign of popularity as a stove flowering plant disappearing altogether from cultivation, this handsome large flowered Martynia-like plant has been again introduced to Kew, where it is now flowering in the T range. The Kew plants are as yet small, but when grown on this Chirita forms an erect, simple, or slightly branched, suffrutescent plant 2 feet or 3 feet high. The leaves are ovate, lanceolate, about 3 inches long, and are covered with a white silky down, which gives them a silvery appearance. The flowers are axillary on long thin stalks, and in shape and size resemble the flowers of *Martynia fragrans*, the colour being that of *Gloxinia maculata*, namely, pale blue, with a blotch of yellow in the throat. Being a free grower and easily propagated, either from cuttings or seeds, this plant may be recommended as useful for a warm greenhouse or conservatory during the summer. *C. zeylanica* and *C. Walkeræ*, also natives of Ceylon, are sometimes to be met with in gardens; the first bears a panicle of dark blue *Gloxinia*-like flowers and grows to about a foot in height, the second being like Mooni, but smaller in all its parts and of a darker shade of blue. A fourth species, and the only other garden Chirita, is *C. sinensis*, which is a well-known plant, and when well treated very ornamental. Plants of this may also be seen in flower in the stoves at Kew.



THE REGION OF THE GREAT CONIFER ON THE PACIFIC SLOPE.

FLOWER GARDEN.

HARDY FLOWERS—A RETROSPECT.

Now that the summer is pretty well over, we lovers of hardy flowers find ourselves more or less "out of it." We have had our innings and may now field out and watch, with what admiration we may, the performances of other people's Calceolarias. There are some no doubt who may yet extract a melancholy gratification from their Michaelmas Daisies, but to those who have abjured composites, even this last consolation of the declining year is denied, and there is in fact nothing left them but their anecdote and the Narcissus catalogues.

Taking it on the whole, it cannot be said that we have had an altogether successful season. Last autumn and winter were warm and wet, and the slug's mouth in consequence was never shut. The early spring indeed, during the season of the first spring flowers, was delightful, and for once in a way the Crown Imperials were allowed to live out their lives and die in their beds without being blown to pieces by that anarchical Nihilist, the north-east wind. But the cold rasping winds which were absent in March were present in May, and even during part of June, and the beauty of many of the spring and early summer flowers suffered in consequence, while the great heat and drought of the later summer made life itself a difficult matter to many of the choicer alpine—at any rate, in the gardens of those humble amateurs who have not the advantage of a "water privilege" always ready to be turned on in hot weather at the top of their rockeries.

The following notes may perhaps be useful to some amateurs, but they refer only to such hardy plants as present, or are supposed to present, some difficulty of cultivation, or to such as being somewhat rare have struck me as being exceptionally good, or the reverse. To begin, like an orthodox botanist, with the Ranunculaceæ, let me remark that Clematis coccinea strikes me as one of the very best things of its kind among plants of recent introduction. From notices in the gardening papers and elsewhere, it appears to vary considerably in colour, but the colour, as seems proved, varies in richness inversely with the amount of coddling the plant receives. My specimen, growing at the base of one of my rockeries and climbing over it, was planted last year and has flowered freely this. The flowers are a fine warm scarlet externally, and the foliage the richest and most luxuriant green, never during the whole of this trying season showing the smallest symptoms of blight. The plant appears to be perfectly hardy, but in early spring when the young shoots are pushing they should be protected from slugs. *Anemone alpina* I have never yet succeeded in making grow. I see my last plant (the fourth, I believe) has just joined the majority. *A. sulphurea*, one of the very loveliest of the tribe and of all spring flowers, appears to do well in pure grit and sand. Let me observe, by the way, that *Adonis vernalis* does the same. I mention it because this is commonly offered by nurserymen among plants easy to grow. This, as far as my experience goes, it certainly is not. The slugs are "nuts on it," and it cannot endure cold soils, though no doubt a certain amount of manure will do it good. *Anemone decapetala*, a plant which there are few to praise, is, I think, a really good thing. It flowers freely, and is at the same time extremely neat and compact in habit, a virtue that cannot be predicated of its cousin, *A. sylvestris*. *Trollius asiaticus* Fortunei is, as far as I know, the finest of the genus. I have lost it myself, having only flowered it well the first year it was planted. There seems to be some difficulty with these orange-coloured *Trollius*. The common *T. asiaticus*, which I have had for years, has never attempted to flower, and it has treated a friend of mine and a far more skillful gardener in the same way. *Delphinium cashmerianum* (figured in this periodical and also in Royle's "Flora of the Himalayas") is worth growing simply as a specimen of the Himalayan flora, but not otherwise or in quantity. The foliage is rich and

good and the habit rather dwarf, but the colour is poor, like a Monkshood, for which indeed "the profane" (and in spite of "the improvement in the taste of the gardening public," which we are occasionally called upon to note, most of one's neighbours still belong, I fear, to this category) are apt to mistake it.

The self-satisfaction of feeling that you possess the best there is to be had is always agreeable, and this is what I feel in seeing *Coronilla iberica* flourishing on my rockery. I have given some little study to this order, and have come to the conclusion that this is the most beautiful of all the yellow dwarf Leguminosæ. I am indebted for it—as indeed I am for numerous other beautiful things—to the kindness of Miss Jekyll. Another good plant of the same order and habit is the native *Hippocrepis comosa*, and a third is *Medicago marina*, a plant not, I believe, in commerce. *Astragalus monspessulanus* grows somewhat slowly; it is pretty, but inferior in beauty to *A. adsurgens*, a variety with dark blue-purple flowers, which Messrs. Froebel call *le plus bel astragalus connu*. None but the smallest rockery should be without *Ononis rotundifolia*, and although it is not hardy in cold winters, no garden should be without *Lupinus arboreus*. I think I have seen somewhere in THE GARDEN that there is a white as well as purple and yellow varieties of this plant. If there is, it must be a great addition, and I wish I knew where to get it.

While the Cruciferae are in full blaze we "chortle in our joy" perhaps more loudly than at any other time of the year, but I am only going to select two or three plants in the order for the purpose of giving them a passing kick. I was rather amused at reading some months ago in THE GARDEN a paragraph in praise of *Arabis blepharophylla*. It was stated, if I remember right, that this plant rejoiced in rich soil, and did best on the top of a wall, two conditions which some people may think difficult to compass at one and the same time. Be that as it may, it would be difficult to find a more miserable little bit of rubbish than was this plant as it grew and flowered for two years on the top of my rockery. Last spring I potted it, and it is now, I see, growing vigorously, but I can hardly believe that even a fine specimen, presuming it to be capable of making one, would be much worth growing. It is a native of California, and has, by the way, had the honour of being figured in the *Botanical Magazine*. Another *Arabis* (*A. cœrulea*) I have never come across in England, though I daresay there may be specimens in good gardens. I have twice established this, apparently successfully, and twice lost it in the height of the summer from sunstroke. I shall not break my heart. The plant has rich green glabrous leaves, and is pretty on that account; but the donor of the specific name (good heavens! I hope it was not Linnæus) must have been affected with that curious colour blindness from which so many professional horticulturists appear to suffer. The insignificant little flowers are whitish grey, but the blue hue seems to be a "pure abstraction." A month ago I should have been inclined to say that *Iberis petraea*, a miniature form of the common *I. corifolia*, had merits, but the maxim *de mortuis* applies conversely to the departed of the vegetable world; and as the plant in question (which I had from Zurich in the early spring) has died suddenly without giving previous notice of its intention so to do, from me at any rate it shall not win renown.

The order Boraginaceæ shares with the Gentians the larger part of my care and affections, so I wish someone, himself the "right side of the hedge," would tell us how to grow that expensive plant, *Lithospermum Gastoni*. A bit of this, for which I paid 4s. last spring, has, it seems, again gone untimely to earth, although it appeared to start at first with vigour, and was the object of much solicitude. Another expensive rarity, *L. graminifolium*, planted out on the rockery, has grown well and freely, but has not yet flowered. *L. prostratum*, one of the most beautiful of all blue flowers, I have never yet succeeded in establishing. *L. petraea* is an exquisite little shrub; it appears to be quite hardy, and is covered in

June with lovely little blue flowers. *Myosotis rupicola* as seen at Munstead is a display à faire mourir, but, *non cuius homini contingit adire Corinthum*. I attempted in a mild way to do likewise with my enchantments in a sand bed on the flat, but the coldness of some soils is almost incurable. The only way to keep this plant alive in winter, as far as my experience goes, is to plant it in a position on the rockery above the possibility of stagnant moisture. In such positions, however, it is never likely to develop into anything more than a "gem." The Oyster plant (*Mertensia maritima*), a very rare native, is well worth growing. It is impossible, I believe, to save seed, but in sandy soil seedlings come freely up round the parent plant. I have a few of these to give away if anyone wants them. I thought I had established *Omphalodes luciliae*, but during my absence from home the drought, aided by two snails "of old St. Hubert's breed," who had got past the guard, appear to have done for it. There are still a few green leaves on which *omnis moriar* is writ large. This is a lovely plant, but a scant bloomer. There is or was a fine specimen in the herbaceous ground at Kew. I agree with Mr. Wood, who remarks in his useful little book on hardy flowers that *Onosma tauricum* is among the fifty most desirable of rock plants. I may add that I have never yet succeeded in keeping it sufficiently alive through the winter to start again in the spring. No "dodges" for warding off the rain, and no position on the rockery seem to avail. Another yellow Borage-wort, *Arnebia echioides*, grows freely and is perfectly hardy, but a two-year-old plant has not yet flowered. Among the coarser plants of this order (and there are a good many), *Lindelia spectabilis*, which is, I believe, simply a synonym for *Cynoglossum officinale*, is, I think, the best for garden purposes, a beautiful blue and neater in habit than the *Anchusas*. The fact that I was myself fool enough to give 1s. for *Borago laxiflora* is a sufficient answer to the question how anyone could have the audacity to ask that sum for so contemptible a weed.

The Campanulas are a strong order about which a great deal has been written from time to time in this paper, so I will endeavour to tread on as few as possible of my grandmother's eggs. For many of the dwarf kinds I am indebted to the kindness of Mr. Wolley Dod. Among the best of these for general purposes is *Campanula garganica* var. *hirsuta*, the beauty of which is enhanced by the softness of the foliage. Another of Mr. Wolley Dod's has flowered with me for the first time. I am not sure that I recollect its name, but I think it is *C. Tenorei*. The flowers, which are large and salver-shaped, are borne on spikes from 9 inches to a foot high, of a lovely blue, with a dark blotch at the base. A fine specimen of this would be a grand decorative plant. *C. Zoysi*, when established, appears to grow freely. The shape of the bells is unique, but, apart from its rarity, this is less beautiful than many others. I grow it in pure grit, as I do also *C. Allioni*, a difficult thing to keep. I can bear testimony to the character of *Edraianthus dalmaticus* as a true perennial. Two fine plants (5d. apiece), obtained from Zurich in the spring of 1883, have flowered again this year, and have again formed their strong grassy tufts at the centres. *Glossocoma ovata*, alias *Codonopsis ovata*, alias *Wahlenbergia Roylei*, is beautiful. Why we may not call it *Campanula Roylei*, and have done with it, is a mystery known, I presume, to the botanist. Another Himalayan gem (now understood to be referred to this order, having "taken its name off" the Polemoniaceæ) is *Cyananthus lobatus*. I planted this last year on the south face of a rockery, and it grew well and flowered profusely, but last season was wet. This year the plant appears to have been frizzled, and it has not flowered at all. I suspect it is dead; anyhow it seems to be proved that it cannot flourish without ample moisture, and probably a certain amount of shade. Among the taller varieties I consider *C. lactiflora* one of the finest decorative plants grown. Let me remind my brother duffers not to forget to manure their Campanulas; I forgot to have this done last year, and in consequence some of the

common sorts forgot to flower at all, or flowered poorly. Some of these, *e.g.*, *C. Van Houttei*, appear to need taking up and dividing every year or two simply as a matter of health, the roots decaying at the centre.

The history of an amateur's Gentians is, for the most part, a recital of failures, over which it is as well to draw the veil. There is a fascination about these subjects, however, which makes it difficult to leave them alone. *G. lutea* planted as a seedling in 1878 has grown very large, but has not yet flowered. I live in hopes. *G. Burseri*, the most beautiful, as far as I know, of the yellow Gentians, I have not succeeded in establishing. A rare Gentian, *G. algida* (which, by the way, I bought under the impression that it was yellow spotted with blue) has flowered for the first time in my garden this year. The flowers, which are something in the way of *G. cruciata*, are of a dingy white with faint grey spots and markings. *G. Walujewi*, a specimen of which flowered this year on the new rockery at Kew, is just the same, "only more so," *i.e.*, the grey marking or blotch (which some dreamer has called blue) is rather larger and more distinct. These are both introductions of Dr. Regel, and, together with others, the names of which I forget, appeared in the catalogues of the English nurserymen about four years ago with a considerable flourish of trumpets. If they were not Gentians, I fear it would have to be admitted that they were rubbish. The finest white Gentian that I know is *G. macrophylla*, easily established and vigorous, which would be worth growing for its long lustrous leaves apart from its flowers. Among blue summer-flowering Gentians there appears to be nothing equal to the plant which we may as well agree once for all to call *G. septemfida*. This is a slow grower, and those whose plants are not very strong should look after the slugs about the young shoots. *Erythraea elodes* is pretty—the apotheosis, so to speak, of our common Centaury (*E. Centaureum*). It is inferior, I imagine, to *E. diffusa*, which I have not seen. *Spigelia marylandica* (which is, I suppose, a Gentian, if it is not a Loganiad) is charming, and flowers late when other interesting things are getting scarce; it grows freely in a small pocket of peat soil. *Saponaria ocymoides splendens* is not worth 2s. 6d. a plant, but it comes fairly true from seed, and the high-coloured seedlings are certainly an improvement on the old variety. Among the many disquisitions on the *Dianthus* in THE GARDEN, I sometimes wonder that no one ever says a word in favour of *D. cruentus*, the colour of which is almost unique among the species. There is another variety, which I see they call *D. sanguineus*, a name which well illustrates the distinction without difference. I am not myself among the "Daisy people."

Here, indeed, at a tolerably safe distance from "dear old Kensington" I will boldly admit that I rather prefer Thistles. I must, however, say a word in praise of a composite kindly sent me last year by Mr. Wolley Dod which has all the merits such a plant can possess. The flowers are of great size and are freely produced, and the plant itself, although vigorous, is neat in habit and ornamental. Mr. Wolley Dod has since informed me that the true name of this plant is *Doronicum plantagineum* var. *excelsum*; it is not, I believe, in commerce, at any rate under this name. Your correspondent who proposes to throw away *Senecio pulcher* is, I think, mistaken. Until the present year my plant had not flowered for several seasons, but I moved it in a clump to the foot of a rockery facing south last spring, and it has done admirably; it clearly wants heat and sun to enable the flowers to develop in time.

The best investment in the way of a Lily that I ever made is *L. testaceum*; a bulb for which I gave a shilling three seasons ago has this year thrown up four flowering spikes. The finest (and likewise the most redolent of sick headache) of all yellow Lilies, if not of Lilies which are not yellow, is, *me judice*, *L. colchicum*. It is not, however, very

easy to establish, and it never appears to increase. *L. Washingtonianum* is an exquisite Lily. I have it planted, "according to Cocker," a foot deep. Among liliaceous plants that are not Lilies; *Ixiolirion tataricum* is one of the most beautiful. The "only Allium worth growing" bids fair to rival the "eighty greatest living poets" in point of number. Everyone who aspires to talk about hardy plants should, I apprehend, be prepared to recommend one on his own account, so I will mention *A. pedemontanum*. This has the merit of belonging to the Onions only in the Pickwickian or botanical sense. The flowers are produced in purple bells. It requires no special culture. A bed of showy annuals is in itself a pretty thing. This effect can be produced by sowing *Convolvulus tricolor roseus*, but the same can be done cheaper and better in other ways, and the variety in question with its pompous name is trash. I will conclude these remarks by saying that I always cover a greatly cherished bed of *Pau Anemones* (*A. fulgens*) by planting out *Salpiglossis*. I find this



Flowering stem of *Funkia grandiflora*.

does no sort of harm. When I left home on September 6 I had it all pulled up, but it had been in flower a full month. This will partially answer a question that appeared in THE GARDEN a few weeks ago, but it must be remembered that the period of dormancy of *A. fulgens* is longer than that of *A. coronaria*; consequently, the advice already tendered in these pages about the load of manure is probably the sounder. J. C. L.

NEW DAHLIAS AT THE CRYSTAL PALACE SHOW.

It seemed fitting that the beautiful new show Dahlia Mrs. Gladstone, undoubtedly one of the very finest varieties sent out in recent years, should have been placed in the post of honour as the premier Dahlia in the show. We had previously seen it in several collections of Dahlias this season in various parts of the country, and its appearance and splendid form fully justify Mr. Turner's confident prediction that "it is the most perfect show variety yet raised." It is perfect in size, petal, outline, and centre, and Mr. Glasscock's splendid premier flower was absolutely the finest of many fine blooms shown on this occasion. It put in an appearance at the Crystal Palace show

last year under the name of Mrs. Hurst, which was ultimately changed to Mrs. Gladstone. It is far away also the best of the new flowers of the present year. Mrs. F. Foreman (Keynes & Co.) promises to be a very useful rich lilac self of good form and substance; and it may be remarked that new flowers often show better form the second year of sending out than they do the first year. *Arabella* (Keynes & Co.) is a very pretty fancy buff, with scarlet and crimson stripes, and will no doubt make a good show flower. Of the new varieties of 1883 I give the precedence to Miss Annie Melsome, a charming fancy variety sent out by Keynes & Co. It is of a yellow ground with white tip, appearing to come very true, good form, petal, and outline. *Rebecca* is another pretty fancy from the same raisers, lilac, striped with crimson, large, good form, and constant. *Hope* (Keynes & Co.) is a charming light rosy lilac flower of symmetrical form, that will be grown for exhibition purposes. *Buttercup* (*Fel-lowes*) is a good useful yellow, slightly tinged with red on the edges. These were all we saw in anything like good form at the recent Crystal Palace show.

Of the seedling flowers shown for the first time this year, the honours laid with Messrs. Keynes & Co. Three first-class certificates of merit were awarded to them for the following fancy: *General Gordon*, a variety that promises to take the same high rank among the fancy that Mrs. Gladstone does among the show flowers. It has a bright yellow ground, striped and flaked with pale orange-red, fine petal, outline, and centre. It is so constant that at the recent exhibition of the Trowbridge Horticultural Society, Messrs. Keynes and Co. were able to stage eighteen blooms of it. A fine flower of *General Gordon* on Messrs. Keynes and Co.'s stand of twenty-four fancies was saluted as the premier fancy in the whole exhibition. The next is *Romeo*, also a fancy, having a buff-yellow or pale orange ground striped with maroon or dark crimson, excellent form, petal, outline and centre; a distinct and valuable accession to the varieties in this division. The third is *Mrs. Langtry*, a tipped show variety, having a yellowish buff ground, the centre pale yellow, the petals edged with bright red and maroon, good close high centre, petal, and outline, promising to make an excellent exhibition flower. Messrs. Keynes and Co. also had *Falcon*, a very novel and pleasing variety, pale ground suffused with pale orange, buff, and rose, and edged with silvery pink; good centre and petal, a little wanting in regularity of outline, but still a taking flower. The same exhibitors also had *James Huntley*, a large bright purplish crimson self, a little flat, but with a good centre.

Mr. G. S. Harris, Junr., of Orpington, had *Duchess*, rich deep yellow, good form; *Baroness*, pale ground, suffused with delicate pink; *Rose Queen*, of a very peculiar hue of pale rose, the circumference flushed with lively pink; and *Arab*, crimson, shaded with maroon, rather coarse as shown. A few new pompones and single Dahlias were also shown, but these shall be referred to in another paper. The fact that no certificate of merit was awarded to any variety in these two sections leads to the inference that they were considered not to be improvements on varieties already in cultivation. R. DEAN.

GREAT WHITE PLANTAIN LILY.

ONE of the noblest and sweetest plants amongst hardy perennials in flower just now is the great white-flowered Plantain Lily (*Funkia grandiflora*), a spray of which is so admirably sketched in the annexed illustration by Miss Jekyll, of Munstead. The large pale green heart-shaped leaves, the tall handsome spikes of pure white flowers, delicately scented, combine to make this a most desirable border plant. It has, however, its drawbacks, inasmuch as it is a little fastidious in its requirements. It likes a light, warm soil; otherwise it does not flourish to perfection. At the best of

times it is not a very free bloomer—not nearly so free as other Funkias; moreover, it has the misfortune to be specially liked by slugs and snails, particularly while young and small. Notwithstanding all this, however, it is a plant that we can ill afford to be without, flowering, as it does, when most other hardy plants are on the wane. On such light soil as that at Munstead it forms huge tufts which in themselves are quite features of interest. Though the soil in which it grows should be light and warm, it must not be supposed that it must necessarily be poor; on the contrary, few plants better repay a little feeding than do all the Funkias, and they are partial to moisture and particularly grateful for shelter in spring from cutting cold winds. W. G.

AUTUMN FLOWERS.

WHERE a continuous supply of cut flowers has to be maintained at all seasons, as is the case in the majority of places, the chief source during the early autumn months is undoubtedly the mixed border. A selection of hardy perennials and other plants, arranged with the view of producing a good effect in autumn, will prove advantageous for this purpose apart from any garden display which it may make. Summer-flowering subjects are in general, owing to heat and drought, only of short duration, but by way of compensation for this we have now an unusual display of hardy perennials in mixed or special borders. By the latter term is meant the substitution in the flower garden of whole beds of some striking annual or perennial plant for what has hitherto been one or another of the ordinary summer-bedding subjects. We adopted this plan last spring in the case of several beds, and the results have been, and in many cases still are, most satisfactory. Many of our autumn flowers are extremely showy, and, provided the weather is not wet continuously, they last in good condition for a long time. The first meriting notice is the ever-popular *Anemone japonica alba*. This pure white form and the pale rose-coloured variety named *hybrida* have both a more vigorous and free-flowering habit than the type. Either may be readily propagated by cutting the roots in winter into short lengths and placing them singly in small pots. If planted out in spring in good soil, the majority will flower the first year, although not so strongly as when better established. The soil is best kept rather low to admit of plenty of water being supplied in summer. A few *Gladiolus* roots planted somewhat late in the season at equal distances apart between the *Anemones* produce a fine effect when in flower. *Rudbeckia speciosa* is also a fine plant for beds by itself. Circular beds of not less than 6 feet or 8 feet in diameter are best suited for this and the other plants under notice, as in them they can be seen all round to good advantage. The *Rudbeckia* roots are always near the surface, and should be mulched and kept well watered in summer. Just now their flowers are open in immense quantities, and they will probably last until destroyed by frost. One bed, at least, of the scarlet perennial *Lobelia* should be included in all arrangements, as their intensely bright flowers are always admired, and these are produced by successional growths all the autumn. The plants require staking, as they are very brittle.

Hardy perennial *Phloxes* are finer than usual this season, particularly where a little extra attention has been given them. These will not succeed in a hot dry place where the soil is light and the subsoil gravelly; where such conditions exist, the best plan is to prepare beds in a cool position by removing the soil to a depth of 18 inches and replacing it by a mixture of heavier loam and cow manure. If, in addition to this, plenty of water be supplied during summer, the improvement in *Phloxes* will soon be apparent. The varieties are very numerous, many being of the purest white, while others are of innumerable shades between that and dark crimson. They may be left undisturbed for several years if well mulched annually, but they are probably as good when about three years old as at any time. Single and double *Pyrethrums* make fine flowering plants in the

early part of the season, and many secondary flowers are thrown up by them in autumn. If beds of these are formed, a good succession may be obtained, and the beds kept gay for the greater part of the autumn by planting China Asters between the *Pyrethrums*. The foliage of the latter forms a good groundwork for the Asters, which, when employed in this way, are best mixed, as irregular heights prevent formality, and a greater diversity of form and colour is obtained than when each variety or section is kept separate. *Pentstemons* may be next noticed, being amongst the most attractive of flowers in the latter part of summer and early autumn, and as really grand varieties are numerous, and many of them cheap, there seems no reason why their cultivation should not be extended. Propagation is easily effected in August by placing cuttings of them in a cool close frame, afterwards merely protecting them from frost in winter, and planting them out in spring. Even small plants will grow and flower freely the first season, and if the space allowed should not be filled up satisfactorily, plants of *Ten-week Stocks* may be intermixed with them. Most of the perennial Asters are either too tall or not sufficiently showy for any position excepting the mixed border, but *A. Amellus* var. *bessarabicus* is quite an exception. This is one of the best hardy plants obtainable for a bed by itself. It grows a little over a foot in height and is very floriferous, the flowers being large and of a dark blue colour. Double *Zinnias* are fine when seen in a mass, and are good autumn-flowering annuals. They should be kept growing when young and not allowed to receive a check, or it will be found difficult to get them again into full vigour. If planted out in dull weather and kept well watered, they will grow and flower freely until cut down by frost. *Fuchsias* planted out-of-doors flower profusely during August and September, particularly the old *F. Riccartoni* and *F. gracilis*. It is best to insert cuttings of these for the next year's supply before the plants die down, and allow the old stools to remain covered with ashes in winter. Seedling single *Petunias* are good things with which to form a groundwork for *Fuchsias*, and the latter are suitable for *Petunias* to ramble amongst uncontrolled. Single *Dahlias* are probably seen to best advantage in circular beds of from 16 feet to 20 feet in diameter. If arranged so that the taller-growing varieties are in the centre, and the colours evenly mixed throughout, a fine effect will be the result. This and all other sections of *Dahlias* are, of course, well known to be amongst our finest autumn-flowering plants. *Kniphofias* are exceedingly handsome when seen in flower amongst shrubs, and they succeed in almost any position. The same may be said of the dwarf forms of *Sunflowers*, such as *Helianthus multiflorus* and its double variety and *H. cucurbitifolius*, the latter an annual.

In addition to the foregoing there are many other mixed border plants of exceptional merit that help to make a display at this season, and amongst them the following should not be omitted, viz., *Aster linarifolius*, *A. lævigatus* var. *minimus*, and *A. Shortii*—these are three of the best early Asters; the first two do not exceed 3 feet, the other is from 4 feet to 6 feet in height—*Coreopsis lanceolata*, *Gaillardia pulchella*, *Senecio elegans* and its varieties, *Chrysanthemum coronarium* and *C. carinatum* as annuals, and the early-flowering varieties of the perennial section; autumn-flowering *Colchicums*, *Cyclamens*, &c. These and many others, either of annual or perennial duration, all combine to make our flower gardens attractive in autumn.

J. G. K.

Self-sown Dahlias.—I had hundreds of *Dahlia* plants come up early in the summer in a bed in which a lot of single varieties flowered last year. A few stray plants that were missed by the hoe when cleaning up are now in flower. This seems to show that a stock of seedling plants can be very easily raised in the spring. Those who have limited house room may devote a frame to the purpose. If plants raised from seed which had

laid in the ground all the winter will flower at the end of August, surely they can be had in flower a month earlier if the seed was sown in a pit or frame and the plants nursed on there.—J. C. C.

PROPAGATING CARNATIONS AND PINKS.

FEW plants have had more care bestowed on them than Carnations and Pinks. For a long time past they have been the special favourites of florists, and so long back as 1831 Hogg, a then celebrated grower, published a catalogue enumerating some 400 varieties, most of which are, no doubt, extinct now, but if they have been lost or discarded we have others in every way superior to them, and raisers of them are continually bringing out new ones to add to the stock. These improvements and the exhibition of the flowers in such numbers have attracted public attention to them, and instead of being cultivated by the few, as used to be the case, they are now common in borders, where they ought to be found in great quantity, for there are no hardy plants to surpass them either for variety, beauty, or usefulness. There is hardly any end during the season to the supply of cut blooms which they will yield. For this and other purposes there is nothing like having plenty of seedlings, as they grow strongly, and though many may turn out single, there is sure to be a large percentage of really good flowers, which, if they do not come up to the florist's standard, are good enough in a decorative point of view and make a magnificent show in a border. To be sure of having a fine strain, seed should be obtained from growers noted for them, and though this is not the time of year for sowing, seedlings may be raised thus late; and if care be taken to safely carry them through the winter they will be ready to plant out in spring. It is better, however, to wait till that season, as then there is no danger of losing any, and plants got up then will be little behind those reared in the autumn.

RAISING SEEDLINGS.—The way to prepare for raising seedlings is to get pots or pans and well drain them by putting in plenty of crocks, and over them Moss or rough soil, when the filling up should be effected with light, finely sifted soil, and this ought then to be pressed down level and smooth on the top, when, if gently sprinkled with water, all will be ready for sowing the seed. This should be scattered thinly and regularly over the surface, and afterwards lightly covered with sharp sandy soil, when if the pots or pans are stood in a shaded position in any warm house or frame, the seed will soon germinate and the young plants attain a size large enough for pricking off. This may either be done in boxes or wide, open pans, the best soil for the purpose being a mixture of loam, leaf soil, and sand, which should be pressed down firmly before the young plants are put in. When this is done it will be necessary to water, and to stand the boxes or pans in a pit or frame where the plants can have a little heat just to give them a start, after which they should be kept cool and up near the glass, where they can have plenty of light and air to prevent any drawing. So treated they will grow sturdy and strong, and by the end of May will be big enough for planting out in the open where it is intended they should stand and form bloom. Besides being raised from seed, there are two other ways of propagating Carnations, Picotees, and Pinks—the one by means of layers and the other by pipings or cuttings.

LAYERS.—These are the most certain, as not being separated from the parent plants they have the benefit of their support till they strike. To be successful with layers all that is necessary is to select the shoots best situated by being near to the ground, and having trimmed or prepared these by the removal of a few loose leaves, a cut should be made under each, commencing just below a joint and continuing half through the stems and along upwards so as to split them for half an inch or so in length, when they will be ready for pegging down and covering with soil. In doing this care is needed not to unduly bend up the points of the

layers or they will snap at the cut, and yet it is requisite that they be curved sufficiently to make the parts stand open, so that the earth may come in contact therewith, and if this is sharp and sandy the layers will very soon root. To encourage them to do this water should be given two or three times a week, and as soon as it is found that they are struck, which may soon be seen by examining them, they may be taken off, carefully lifted with good balls, and planted out in the borders. The proper time for layering is as soon as the plants go out of flower, after which there is generally plenty of "grass" or shoots, although these may be made use of at almost any time when they are to be had.

PIPINGS OR CUTTINGS, too, strike best at the same season; take off any shoots that are not well placed for layers, when they should be cut through with a sharp knife just below a joint and then have the two lower leaves removed by shelling them off close, in order that no portion may be left to cause any kind of damping, which would be the case if the leaves were simply cut away by the aid of a knife. When prepared, the next thing to be done is to insert them, which may either be in pots to be covered by bell-glasses, or they may be dibbled in borders to be under the protection of hand-lights, or on beds sheltered by any cold frame. If the latter or in pots, it is a great help towards getting the cuttings to strike if they can have a little bottom-heat, which may easily be afforded by a load or two of fresh manure and leaves or tan, a foot or so in depth, which will give off gentle warmth till they root. If the cuttings are put in under hand-lights the soil should be prepared by being made sandy and then pressed level and smooth, after which they may be inserted moderately thick, and be kept close and shaded by day. Pinks require precisely the same treatment, and if put in and kept damp by being sprinkled, scarcely one in a hundred will fail. In growing Carnations and Pinks, whether in pots or out, their great enemy is the wireworm, which, if in the soil or anywhere near, is sure to find them out and attack them. Before potting, therefore, the loam should be looked over and examined by spreading it thinly in layers, so that any of these pests may be seen and picked out, and it is a good plan also to mix it with soot, which is obnoxious to the wireworm, but acts well as a stimulant, and thus benefits and nourishes the plants. On borders and in beds wireworm may be trapped by putting just under the soil pieces of fresh cut Carrot or small lumps of Linseed cake, which baits they get into and may be taken out and killed. Above ground the worst foes to Carnations are rabbits, which devour the tops wholesale, and will take them in preference to any other food, and soon clear off a border. Where these rodents abound, they should always be kept out of a garden, as no shooting or trapping will save plants that they like. To support the blooms of Carnations when they come into flower there is nothing that answers so well as stout wire spirally twisted, with the bottom left clear to stick into the ground, as by using these guards the flower-stems can be quickly worked into them without any tying. This is necessary when sticks are employed, and at the time of cutting the bloom the ties are a great inconvenience, as they have all to be severed before the stems can be moved; whereas, with the wires, they can be drawn out at once. The way to make them is to cut wire into lengths of a yard and twist three parts of each round a smooth, hard stick, from which they will slip coiled. S. D.

Propagating Violas.—This is a good time to increase Violas, for if the old flowering wood was shortened back in August they will now be dense tufts of healthy young shoots, and may be divided, with the certainty of every rooted piece making a good plant if planted out in beds about 6 inches apart. Violas are moisture-loving plants, but it is surprising how well they withstand drought. In this southern part of the kingdom, where heat and drought were severely felt this season, I can safely say that no other plant made

so good a display of bloom as the Viola. Its many and varied colours and its excellent dwarf habit of growth make it the very ideal of a border or carpeting plant; in fact, now that Verbenas have been discarded from so many flower gardens, the Viola is more than ever required to fill their place. Where it is employed for flower garden decoration it will not be possible to cut back the flowering shoot without curtailing the summer display, but plenty of soft young shoots will be available for cuttings at the base of the old plants. These strike readily under hand-glasses or cloches, and soon make good plants. I find the following dozen kinds to be a good selection—viz., Holyrood, Souvenir, Waverley, Duke of Perth, Peach Blossom, Blue King, Grievei, Gold Prince, Mrs. Innes, Picturata, Forerunner, and Blue Perfection. For forming a groundwork under taller growing subjects I do not find anything to equal Violas; they keep very dwarf and continue to flower without any break the whole season.—J. GROOM, *Gosport, Hants.*

PROPERTIES OF FLOWERS.

"S. W." in your issue of August 30, takes exception to the statement of "M. R." that the absurdities of the Picotee model order have been from the outset repudiated by florists. "S. W." cites Mr. James Douglas's work on "Hardy Florists' Flowers," published four years ago, to sustain his contention. He describes Mr. Douglas as "one of the foremost of modern florists," and asks, is not the model of the "perfect truss" of an Auricula therein given "as great an impossibility and example of intolerable formality as Glenny or anyone else ever conceived?" The Tulip also "is the same, and the general principles laid down for the guidance of florists do not differ in any material respect from those which have guided the fraternity from the beginning."

"S. W." is somewhat difficult to please. I am, however, ready to aver my agreement with him in his stricture on the models to which he refers. With him, I think, they represent "intolerable formality"—in the case of the Tulip positive deformity. I recognise, also, Mr. Douglas as "one of the foremost of modern florists," that is, as a practical cultivator and exhibitor of special flowers; but for Mr. Douglas as an exponent of the properties of florists' flowers I have no respect whatever, and, save as a manual of practice, for which it may be useful to the inexperienced, I have as little respect for his book. Mr. Douglas appears to have been betrayed into borrowing or reproducing so-called models from trade catalogues, and it is much to be regretted that he undertook subjects on which he was so imperfectly informed. Allusion has, I observe, been made to the late Dr. Hardy. The writings of that gentleman on the Tulip, published nearly forty years ago, are still those which command the greatest respect from lovers of that flower. They have been reprinted within the last few years in the *Florist*, and it is unfortunate that the most authoritative source of information on this subject should apparently have been unknown to or neglected by Mr. Douglas.

I am surprised also that so keen a critic as "S. W." should fail to remember Mr. Douglas's heterodoxy in the matter of the shaded edge of the alpine Auricula—a property described by Mr. Horner as the chief beauty of the flower. Unless my memory betrays me, this eccentricity of Mr. Douglas preceded by a very short time the issue of his book. Therefore, whatever respect we may have for Mr. Douglas as a cultivator, "S. W." must not expect us to pay him deference in the matter of the properties of florists' flowers. "S. W." cites old authorities, and says their dogmas are reproduced by foremost modern florists, instancing Mr. Douglas. But he ignores, perhaps may be unacquainted, with the literature which I believe alone commends itself to the most intelligent among modern florists. I allude to the "Essays on the Philosophy of Florists' Flowers," by the late Rev. George Jeans, reprinted in the *Florist* in 1879.

"S. W." will find no hard and fast lines therein, but I think much matter for profitable reading. I commend these essays to his notice, also the papers on the Tulip by Dr. Hardy, as above-mentioned, those on the Auricula by the Rev. F. C. Horner, and those on the Carnation by Mr. E. S. Dodwell—all to be found in the volumes of the *Florist*—assuring him, unless I have failed totally to grasp the meaning and intent of these papers, that he will find there no suggestion or representation of "intolerable formality" or of anything inconsistent with reverence for the wonderful variety and breadth and beauty of Nature.

NEMO.

Borago laxiflora.—This Boragewort, as grown in the ordinary border, has nothing particular to recommend it as a garden plant owing to its straggly habit, but as we saw it the other day on an old rockery with plenty of room and in good soil few plants are more beautiful. It is particularly appropriate for rough planting in semi-wild situations, or for hanging over rocky ledges in the rock garden. It has large, light blue, star-like flowers and rather handsome foliage. It has the advantage of being a good perennial. It merely requires plenty of room and to be left alone. *B. orientalis* is suitable for the same purpose, being more vigorous, and has larger and handsomer foliage. It is easily established in the wild garden, where it is very imposing associated with early spring flowers.—K.

The Zebra Rush.—This plant, which was first distributed under the name of *Juncus zebri-nus*, but which is correctly *Scirpus Tabernaemontana*, is an instance of a plant having been put in commerce as a stove plant when really it is a hardy perennial presumably as hardy as our native Rush. As a natural consequence, the plant never flourished when stewing in a hothouse, but someone had the courage to place a plant in the open air, the result being that it was found to thrive to perfection under this treatment. In our case the plant was placed in a bog in the open air, and its robustness of habit, the distinct marking of the leaves, and its dimensions all denote that the plant is quite at home. It dies down in winter, and seems to keep better through the winter when entirely submerged. It is undoubtedly one of the most striking and useful foliated bog plants in cultivation.—K.

Senecio pulcher.—Let me do this flower justice. I have no doubt it will bloom in the far south, as Mr. Archer-Hind states, and it may also bloom in Cumberland, where there are some abnormally warm spots, as the crops there testify, but, as a rule, it is too late to flower well in the north or in cool localities in the midlands whence I write. We have had it several years, and it has always thrown up flower-stems, but the buds have never expanded. At present, owing to the favourable season we have had, we have now four flowers out and over five dozen buds at different stages, which I do not expect to flower. The plants are in a little bed by themselves, in good soil and position. After all, the flowers are no better (if as good) than good single Pyrethrums, and quite inferior to a good Chinese Aster as regards show or effect.—S. W.

—This plant is thriving very well with me, or rather one plant out of two which I possess. The best plant has three flower-spikes; one is 3 feet high with several flowers on the top; the other two spikes are not so high. My plants do not get any sun after 3 p.m., and the plant which is doing so well has its roots shaded by a specimen of *Physalis Alkekengi*. The other stands clear with the sun shining direct on the soil over the roots. I know of no other reason why one plant should be so much better than the other. They were both strong and healthy when planted last September, and the soil for both is the same.—J. C. C.

—If "S. W." retains his intention of throwing this beautiful and vigorous plant into the waste heap, I trust he will send all he has to me. I will willingly pay the carriage.—SALMONICEPS.

FLORISTS' FLOWERS AT HAWICK.

HERE, in the heart of the Lowlands, and sheltered from winds, Mr. Forbes, at his Buccleuch Nurseries, is enabled to secure a luxuriance and vigour in most hardy plants which is frequently denied to cultivators in the north of Scotland or even in the south of England, the one being too bleak and moist and the other hotter and drier than is suitable for the successful culture of many hardy plants. The Waverley route from Carlisle to Edinburgh is alternately climbing high hills and winding along the sides of richly cultivated valleys for a hundred miles, and it is upon the south-west slope of one of these valleys that this nursery is situated. It will be expected, therefore, as is the case, that specialities are made of hardy plants suitable for all, even the most fastidious, of flower lovers, Pansies, Pentstemons, Picotees, Carnations, Antirrhinums, Hollyhocks, Dahlias, and Delphiniums being amongst the chief. A strain of uncommon show and fancy Pansies seems to be the principal feature just now. One bed is a perfect mass of bloom, being 50 yards long by 20 yards, and another 40 yards by 20 yards, in which, most noteworthy at this date, are Miss Fraser, Miss Baird, Mrs. Wightman, Duchess, Mrs. Grant, W. Windle, Wm. Chaplin, Blue Gown, W. B. Hole, Fair Maid, Lizzie Stewart, Miss Whitwell; these are of indescribable beauty. A bed of *Lobelia cardinalis* next one of *Delphiniums* is very effective. Amongst *Phloxes* the best are Dr. Hornby, Hugh H. Smiley (rosy salmon), Peerless (white, pink eye), Mrs. Kerr, W. Kilgoud, Miss Alice Henderson, and Mrs. Calder. I should imagine that there is nothing in the country to surpass a large bed of *Hollyhocks*, now in full beauty; they range up to 9 feet, and certainly average 7 feet high. They are simply perfect and without disease, with clear green leaves up to 10 inches wide, clothing their stems from ground to summit. Most of the blooms are 4 inches and 5 inches in diameter, and vary in colour from pure white, lemon, white shaded pink, salmon, light scarlet, rose, crimson (like a large A. K. Williams Rose), deep crimson, *Pæony*-like blooms to blackish purple. *Pentstemons* are so much alike after one has seen a dozen types, that, like *Roses*, we could do with two or three of their names bracketed together, as too much alike. I, however, append the names of a few particularly fine kinds:—

Crimson, white throated varieties ..	Wm. Robison.
Scarlet	Geo. Ramsey, Eccentric.
Deep rose	Geo. Wood, A. Robertson.
Bluish purple	Wm. Milligan.
Reddish mauve	Mr. Greenfield.
White, pink edge	Ed. Tate.
Light crimson	Walter Anderson.

Antirrhinums are almost beyond naming. They are here in beds of glorious blooms, yellow with crimson stripes and spots, white with crimson stripes and lemon lip, deep golden with crimson stripes and spots, white tube, and rich crimson edges.

Amongst *Carnations* (yellows flaked with scarlet, crimson, or mauve), the following are the best: *Fancy Queen*, *Neptune*, *Venus*, *The Fairy*, *Hero*, *Cleopatra*. *Guiding Star* is a scarlet, without tendency to bursting, and very full; *Nemesis*, a white, deeply flaked with maroon; *Snowflake*, pure white, very double, circular, and regular; *Ophir*, cream, flaked white; *Comet*, bright scarlet, with maroon flake. The beauty of the small beds at the entrance to the glass houses is much enhanced by a large mass of *Hyacinthus candicans* now in the perfection of bloom. R. A. H. G.

The origin of *Crinum* Powell.—Your correspondent "S. L." asked for information in a recent number about this *Crinum*. His queries can all be answered by referring to p. 43 of E. G. Henderson and Sons' bulb catalogue of 1881, for it was then first distributed and named by this firm after myself, the originator of this hybrid. If, however, you deem its origin worthy of notice

in your pages, I will tell you its history, and will enclose for your inspection some of its blooms, together with one of the pollen-bearing parents. The seed bearers were the ordinary and hardy *Crinum* capense, both the rubrum and album varieties, and I may note here that the white variety of *C. Powellii* originated from the former, there being only two of them in the batch of seedlings, whilst the higher coloured forms came from album. Messrs. Henderson in their catalogue state that the pollen parent is Moorium. It is certainly the same *Crinum* which has done so well at Glasnevin, where it has flowered outside for many years. I bought it from the late Mr. Barrett, of St. John's Nurseries, Bury St. Edmunds, where I resided in 1874, and he told me he got it from a gentleman who brought it from the Cape. When I took a bloom of it to the Pine-apple Nursery, Mr. O'Brien said it was *C. conspicuum africanum*, and that Moorium had originated from it at Glasnevin by crossing with amabile, and therefore was not hardy. This is a point on which I should wish to be enlightened, but *C. Powellii* does not bear seed, and in habit and shape of bloom, though bearing traces of both its parents, is superior to them, for I have now spikes 3 feet high thrown well above the foliage, which is long and narrow at the ends like capense, but much taller and stiffer, not being so easily broken and torn by wind, as is the broader foliage of the pollen plant. To prove that this *Crinum* is both hardy and easy to grow, I may state I sowed the seeds in 1874 in a greenhouse. They were put out-of-doors the following summer, and remained without any protection, except a slight mulching, till October, 1880, when I sent Messrs. Henderson two sugar barrels full of bulbs, each of which required four men to lift.—C. B. POWELL.

***Lobelia fulgens* Victoria.**—What a striking bed this plant makes early in autumn! I have now a round bed 6 feet across, 4 feet of which in the centre is filled with this *Lobelia*; next it there is a ring one row wide of *Centaurea ragusina compacta* and an edging of *Golden Feather*. Even before the plants came into flower the dark bronzy foliage formed a striking contrast with the white and yellow, but now they are in flower the effect is greatly heightened. When bedded out this plant does not fill up like some others, or, in other words, an individual plant does not cover much more space when it is in flower than when it was first planted; for that reason it requires to be planted pretty close together to be effective. We increase our stock by dividing the old stools early in spring. As soon as the plants go out of flower they will be taken up—the flower-stems having been cut off previously—and planted in boxes or laid on the floor of a late Peach house, where they will remain until early next April. They will then be again planted where they are to flower; the roots may also be kept in a pit or frame. All that they require during winter is excluding excessive damp or severe frost.—J. C. C.

SHORT NOTES.—FLOWER.

Yucca grandiflora—Dr. Harris, writing from Trengweath, Redruth, says that he has a very fine specimen of *Yucca* under this name now in flower in his garden. The spike is 5 feet in height and quite erect. It is presumably a variety or perhaps a synonym of *Y. gloriosa*.

***Pelargonium* Henri Jacoby.**—This without doubt is the best of all the crimson zonals for bedding. It is dwarf in habit, yet sufficiently vigorous to cover a fair amount of space. The trusses of flowers are also large and freely produced. Taken altogether, it is a most effective variety, and those who have not grown it in pots for winter flowering may be safely advised to do so. It is not surpassed by any that are recommended for that purpose.—J. C. C.

Large & small single Dahlias.—There can, I think, be but one opinion as regards small single Dahlias being better than large ones. The small flowers are the best in form, and the difference between the two in appearance is so striking, that when small flowers and large ones have been exhibited together, the large ones have been passed over and the prizes, very properly, I think, been awarded to small flowers. Even *White Queen* looks coarse and poor compared with small circular flowers with flat petals.—J. C. C.

EAGLEHURST CASTLE.

THIS occupies one of those favoured spots in South Hants on which Nature's charms have been bestowed with no sparing hand. It stands on a considerable elevation, embowered amongst foliage, and yet possessing a magnificent sea view. Exactly opposite are the Isle of Wight and Cowes harbour, while during summer and autumn the sparkling waters of the Solent are covered with innumerable yachts, the Royal Yacht squadron making it their rendezvous. But it is the gardens that surround this interesting old castle to which we must confine our observations. A fine old tower that stands quite detached from the present mansion, and which is probably the relic of a more ancient structure, is covered at the base with noble old Ivy plants that have bravely withstood the violent gales of wind to which they are exposed. The mansion itself is covered with climbers, and fragrant shrubs luxuriate against its sunny walls. Amongst the latter are *Myrtles* now covered with blossom, *Sweet Bays*, *Magnolias*, *Roses*, *Clematises*, *Jessamines*, and many half hardy plants usually seen under glass, but which in this locality seldom suffer from frost. *Camellias* grow freely here, and outside in a sheltered nook I noted a beautiful bush of the double pink *Oleander* that stood out last winter without any protection, and which is now covered with blossom. Climbers are here allowed to grow in their own natural style, only just sufficient pruning and training being given to keep them to the walls, and thus managed they are far more effective than when pruned and trained as creepers usually are. The long shoots of the previous year's growth were complete wreaths of blossoms, even kinds that under close pruning seldom produce anything but leaves.

THE FLOWER GARDEN in front of the mansion was well filled with bedding plants, consisting of large masses of *Heliotropes*, *Pelargoniums*, *Verbenas*, and other bedding plants, the old *Calceolaria amplexicaulis* being the only *Calceolaria* that succeeds here. *Lobelias* raised from a selected stock of *speciosa* formed dense masses of blue; they were sown in autumn in boxes and kept in cold pits during the winter. Amongst hardy plants which are largely cultivated here for supplying cut flowers, autumn *Anemones* in large masses made a fine display, and *Phloxes*, *Larkspurs*, and a great variety of free-flowering plants filled several long borders. Violets are grown here in large quantities on shaded borders. Single crowns transplanted in April and kept free from all runners and well supplied with water during summer never fail to yield an abundant supply during winter and spring; a seedling blue kind is largely grown, as it flowers continuously for many weeks.

THE TREES that thrive best here are the *Evergreen Oak*, of which some very fine specimens grow on the lawn with branches resting on the Grass. The *Evergreen Oak* is invaluable for seaside places where *Conifers*, except those of the hardiest kinds, fail to attain anything like the proportions which they do in sheltered inland gardens. A fine specimen of *Eucalyptus globulus* here begins to show its true character, the leaves being hard and leathery, and altogether different from those of young trees.

UNDER GLASS was a fine crop of *Grapes* in a large house that has served as vinery and conservatory for nearly a century, the stems of the old Vines planted outside and brought through the wall attesting their antiquity. Yet although only in a narrow border of prepared soil, these Vines finish off grand crops of *Grapes*; the roots run freely into the lawn and flower beds in front, and have doubtless long since spread in all directions, thus showing that Vines will remain healthy and vigorous for an indefinite period in the natural soil, provided they can get an unlimited root-run. Tomatoes in pots were especially fine, the old smooth red being as good as any of the new sorts, and in a house devoted to Melons and Cucumbers the Melons were carrying some fine fruit, making the third crop from the same plants this season. Plants suitable for indoor decoration consist of Ferns, Palms, *Dracenas*, and other fine-foliaged

subjects, the whole being entwined by fine masses of Achimenes, Vallotas, and other autumnal flowering plants. Coming on for a late display, too, was a fine lot of Chrysanthemums grown as standards; they are plunged in ashes and secured to stout wires, and promise to make a fine display.

ON THE WALLS, ancient though they are, some of the finest specimens of open-air Fig trees in the kingdom may be seen here; a Brown Turkey covers an enormous space, and is loaded from base to summit with fine fruit. The mode of pruning is to cut out any long branches entirely that are getting bare and straggling and to lay in short-jointed wood; if the shoots are pinched in summer very little fruit is obtained, but if allowed to grow unchecked, from four to six fine fruits that ripen in succession through August and September are obtained from each terminal growth. Far more gigantic in proportion, however, is a pair of the true White Marseilles Fig, which, owing to neglect of training, has long since left the wall and grown out into wide-spreading standards, the strongest branches towering up in the air, and those of weaker growth spreading out on to the border, which, although 12 feet wide, they entirely cover, and have to be annually cut back to keep them off the walk. A few years since it was decided to erect a substantial support, consisting of posts and cross-bearers 8 feet high, and allow these Figs to extend over the walk. This trellis they have now entirely covered and hang down, forming a leafy bower furnished with fine luscious fruits. A trellis covered with hardy Vines screens the kitchen garden, and hardy Ferns are planted around their stems and the buttresses of the wall.

PEARS ON WALLS have been a good crop here this season, though not up to the average. The best were Williams' Bon Chrétien, Marie Louise, Easter Beurré, Winter Nelis, and other good old kinds. Newer sorts are well represented by young bush trees that are making fine growth, but thinly fruited this year. A fine tree of that useful culinary Pear, Catillac, was well covered with very fine fruit. This is a useful kind in spring when culinary fruit is at its lowest ebb.

PEACHES AND NECTARINES on walls have been a fine crop, and young trees planted four years ago have entirely covered the wall from base to summit with good bearing wood. Early Louise ripens here in July, and by having a good selection of kinds that ripen in succession, a long Peach and Nectarine season is the result. Plums are a thin crop both on walls, standards, and bush trees.

APPLES are a good crop, although the tips of the young wood on many of the oldest trees die back. Numbers of the best varieties have, however, lately been planted on Paradise stocks; they are allowed to grow into natural-shaped bushes, and these are carrying fine fruits, notably Warner's King, Alfriston, Stirling Castle, Cellini, Lord Suffield, Keswick Codlin, Manks Codlin, and Dumelow's Seedling. Amongst dessert sorts, Cox's Orange Pippin, Ribston, Margil, Golden Pippin, and Sturmer Pippin are the most noticeable. The old trees here were at one time nearly all close spurred, but during the past few years they have been allowed to extend, and the trees are far more vigorous, and carry more regular crops than they did under the hard pruning system. Some kinds are especially benefited by extension, while others are fruitful under any conditions.

THE KITCHEN GARDEN is a walled enclosure of considerable extent. During the greater part of the year large quantities of vegetables and salading are required. The past summer has been an exceptionally dry and hot one, and the soil on this part of the south coast being of a light nature, at is only by deep cultivation, liberal dressings of manure, and copious waterings that such luxuriant crops as may here be seen can be produced. Mr. Watson, from ten years' experience of this part, has wisely adopted the plan of growing most of his moisture-

loving crops in trenches, making them wide at the top, so that by giving plenty of manure under the roots and a little as a mulching, the active fibres are kept cool and moist. Runner Beans treated in this way were weighted down with fine pods, and Celery and other crops looked as if they had been subjected to a dripping season instead of a dry one. Salading, too, that under ordinary culture has been well-nigh dried up, was here fine, crisp, and abundant. Brussels Sprouts were especially strong, and I was informed that they are always planted after winter Spinach without any digging of the soil, as the harder it is the firmer the Sprouts are. Cauliflowers, whether small or large, in seasons like the past go off just before they are fit for use with the disease known as clubbing, the result of grubs attacking the roots. Peas only do well here on freshly trenched soil. Asparagus and Seakale grow with great luxuriance, not only as cultivated garden crops, but also in a wild state on the shore, the shingle just above high-water mark being covered with gigantic tufts of Seakale, that in spring produce the finest of blanched Kale by simply heaping loose shingle over the crowns about 1 foot deep; as soon as it pushes through the shingle it is fit to cut, and the heads are as solid as a stick of Celery. This kind of Kale is sold in Southampton at about 6d. per pound. I also observed here some of the finest of our wild native fruit, the Blackberry, for which South Hants is noted, growing right down to the water's edge. It is indeed singular that no attempt is made to cultivate this useful fruit, seeing that in this part it sells readily at from 4d. to 6d. per quart; moreover, we never get Brambles killed by frost in winter, and they grow freely on land on which very little else will succeed.

Gosport, Hants.

JAMES GROOM.

NOTES.

Autumn days.—How delicious are these sunny autumn days with their autumn light and subtle combination of tropic warmth wedded to a fresh chilliness easily felt, but not easy to describe. I can scent the luscious ripe Figs on the warm walls, and the big Pears are golden against a clear blue sky, and here and there, for the crop is by no means general, the Plums and the Apples are almost too heavy for the branches to bear. There is a rustle of fallen leaves; the great Wistaria is changing to golden, the Virginian Creeper to a ruddy glow, and from it the great Sunflowers stand out, seeming even more golden than they really are. Already the robin is becoming sociable, and either follows the spade for a meal, or he warbles a sweet little song quite near to one. A few sprays of purple Clematis wedded to the white Virgin's Bower is a picture just now, and a thousand golden Daisy flowers sway and glitter in the mellow sunlight. Then come the nights of cool white mist, for already the harvest moon has hung her lamp on high.

Ornamental Vines.—At Chiswick in the good old times one of the prettiest autumnal features of the place was produced by the different kinds of hardy Grape Vines. These were *Vitis vulpina*, *V. labrusca*, and some others which gracefully draped and festooned some ornamental chains and ironwork near the council room, and when their leaves became crimson stained and yellow hued in October the sight was more suggestive of sunny Italy than of cloudy England. In warm and sheltered positions, especially on limestone soils, some very pretty effects might be made by wreathing old tree trunks and terrace walls with some of the finest of the ornamental Vines. *Vitis amurensis*, *V. purpurea*, *V. riparia*, and *V. vulpina* amongst others might be planted for their leaves, and in the south especially they would luxuriate to perfection. The turquoise-berried Vine (*Vitis humulifolia*) is very handsome in favoured positions near the sea when covered with its pretty clusters of blue berries late in autumn.

Soot water is not a very poetical heading, but that there is a good deal of practical utility in

well-made soot water is a matter of fact. If you merely make a mixture of soot and water, you have a crude and dirty thing to deal with, and the right way is to put a bushel of soot into a well-made canvas bag, into which a heavy piece of old iron has previously been thrown as a sinker; then tie up the bag tightly and throw it into a tank or large butt of pure rain or river water. None of the crude carbon makes its escape, but you have all the ammonia and other essential component parts of the soot, which are really soluble, and either for syringing or watering it is of the utmost value. Excepting Orchids, I know of no plants that object to soot water so made. *Eucharis*, *Pancratium*, *Vallota*, and *Amaryllis* revel in it, and plants syringed with it are rarely troubled by insect pests. VEBONICA.

BOOKS.

DISEASES OF FIELD AND GARDEN CROPS.

Few, if any, organisms either in the animal or vegetable kingdoms are less understood than the microscopic fungi, yet none are more omnipresent in some form or another. Place suitable conditions for their growth anywhere you like, and unless special care has been taken to exclude them by filtering or in some other way sterilising the air, spores of some species will germinate there and produce a fungoid growth. The characters and life history of these minute plants are, however, much better understood now than they were a few years ago, and though the Potato disease has been the cause of much pecuniary loss in this country, it has in one way been beneficial, for it has directed the attention of botanists very forcibly to the study of other parasitic fungi which injure our various crops, though to a less extent. Under the title of the heading of this article Mr. Worthington G. Smith* has written a very valuable little book, in which he gives a most interesting account of various fungi which are parasitic on our crops. Exceedingly good figures are given of each species in its various stages of growth; under each figure is given the number of times it is drawn larger than nature, and at the end of each chapter is stated the best known means for destroying or exterminating the parasite described. Every agriculturist or horticulturist who wishes to understand the nature of these parasites on his crops and the best methods of dealing with them cannot do better than obtain this work. The author in the introductory chapter says, "In preparing the following pages we have endeavoured to keep three objects clearly in view. First, the description only of such diseases as are of economic importance. Second, the definition of all the phenomena of the diseases in familiar words, such as with proper attention may be understood by all; this has been done without sacrificing scientific accuracy, as all botanical terms in common use are adverted to and explained. Third, the consideration of the best means of preventing the attacks of plant diseases." We cannot think that however well he has carried out his first and third objects, he has succeeded in his second. Many of the terms used must be very far from familiar to those who have not hitherto given this subject their attention, and though the first time a scientific term is used its meaning is very clearly explained, yet the reader may be puzzled by it when it is met with further on (and unfortunately there is no glossary to turn to). It is not everyone who can always remember, having only once met with them, the meaning of such words as oogonium, oospore, oosphere, zoospore, conidiophore, conidium, sclerotium, teleutospore, perithecium, and many others. It is very difficult without making descriptions verbose to avoid the use of scientific terms, but at any rate a glossary might have been added, as is commonly done in works of this description, so that if the meaning of a term is forgotten, it may be easily found. In the index

* "Diseases of Field and Garden Crops," by Worthington G. Smith. Macmillan & Co.

reference is made to the pages on which the word is explained, but this is a very tiresome way of obtaining the information. The value of the book to unscientific readers, as so many practical cultivators of plants are, would be greatly enhanced by the addition of such assistance as we have indicated. The preface states that "these notes on the diseases of field and garden crops are reports of addresses given at the request of the officers of the Institute of Agriculture," and "that in the lecture room the simpler subjects were taken first. This arrangement has been adhered to in the present work." This is all very well from an educational point of view, but from that of a cultivator of plants wishing to know by what fungus his plant is attacked, or by a botanist wanting to study the differences between various species of the same genus, this arrangement is inconvenient; one in which the species described were placed according to their natural affinities would be much better. All the diseases mentioned, except three, are caused by fungi; the exceptions are scab and cracking in Potatoes, supposed to be caused by some unsuitable substance in the soil, such as lime rubbish, builder's refuse, &c.; ear cockle in corn produced by a minute worm (*Tylenchus triticii*), and the Dodder, a well-known parasitic plant on Clover and other plants. The author has, however, omitted any reference to the Bean-brand (*Trichobasis fabæ*), which is very common on Broad Beans at times both in fields and gardens; it appears like a red rust on the leaves. When Beans are badly attacked they are almost useless. The Mangold brand (*Trichobasis betæ*), which infests Mangolds in the same manner, is also not alluded to. When a crop is attacked by any fungus pest, a careful study should be made of all the conditions in which it is growing, so as, if possible, to determine how the foe may be best discomfited. In the introduction the author writes: "We clearly know the nature of some diseases of plants, but as regards the treatment of plants when invaded by parasites, which are too often the sole cause of the disease, we frequently know nothing, as nearly every known disease of the animal kingdom is susceptible of preventive, palliative, or curative treatment; it is only reasonable to assume that the diseases peculiar to the vegetable kingdom are also susceptible of similar management." "No sane, healthy person would remain in a place tainted with the contagion of dead and diseased animals, and it is equally unsafe to place sound plants, tubers, or seeds amongst dead or diseased vegetable refuse." Every care, therefore, should be taken to destroy, by burning, the refuse of any crops which have been attacked by a parasite. If the rubbish be made into a heap, or thrown upon a manure heap to make a compost for dressing land with, the spores of most fungi, as the reader of this book will learn, will not be destroyed, but will remain sometimes for months alive, and ready as soon as a favourable opportunity presents itself to germinate, so that nothing can be more foolish than sowing them hidden amongst a dressing over our land, as is so commonly done. A proper rotation of crops is no doubt a most efficient way of checking the increase of these parasites, for the soil after bearing an infected crop is sure to contain numberless spores, which would at once germinate on the next crop if it were of the same kind; and one might almost as soon expect a child dressed in clothes taken straight from a scarlet fever or small-pox patient to remain healthy as to expect to grow a healthy crop on soil impregnated with a parasite which will live on it. The life history of these fungi is most interesting, notwithstanding their minuteness and simplicity of structure. The variety of their forms and appearance in their various stages is most remarkable; take, for instance, the well-known ergot of Rye. The dark horn-like ergots are composed of a very compact mass of cells. These ergots, early the summer after they are produced, germinate and bear several slender, tortuous stems, each surmounted by a round purplish head. In this state it is known as a claviceps, and used to be considered a distinct fungus. The exterior portion of this head is com-

posed of a layer of cells, each with a small mouth opening outwards. Within this cell are a number of very delicate long bladders, each containing eight long thread-like spores. These spores are in due time expelled into the air and wafted about in all directions; when one of these fall on to the flower of a Grass or Rye, it bursts and forms a minute drop of "glittering vital material." This drop soon increases in size and becomes traversed with numerous fine threads; this is the beginning of the ergot. This growth increases, and attaches itself to the pistil, which it eventually displaces. As it grows it becomes deeply furrowed and honey-combed and its base grows harder. The viscid portion of the half-grown ergot produces spores, which will germinate and produce ergots just in the same manner as the long thread-like spores just mentioned do. When the ergot becomes mature, this upper, less compact growth collapses and falls away.

The transformations of most of these little fungi are equally interesting; that of the Potato disease particularly so. A certain minute fungus is parasitic on the Truffle. In one of its various forms it attaches itself to Moss; when this is the case there are sure to be Truffles underground close by. Botanists who know this fungus look for it when they want to find Truffles. It is an undecided question at present, and one that is often raised, whether the Barberry blight and the corn mildew are different species or only different forms of the same. Many botanists and others hold one view; many the other. The author enters very fully into this subject, giving the opinions expressed by various authorities on both sides. He himself is of opinion that the two fungi are distinct, and that the Barberry blight will not germinate on Wheat and produce corn mildew, and we are of his opinion. Various experiments have been made to try and settle this question, but they have not been altogether satisfactory. Wheat plants have been infected with Barberry blight, and corn mildew has subsequently attacked the plants, but that is no proof that the mildew was produced from the blight spores, and though the latter have been seen to germinate on Wheat, they may be made to do so on many moist surfaces. The Barberry blight goes through its natural changes on the Barberry leaves, at last attaining its perfect or sexual form, and the corn mildew does the same. It would be very remarkable if the same organism to complete the cycle of its changes had twice to attain the sexual form. If it be so, there is no known analogy to it either in the animal or vegetable kingdoms. The gall flies require two generations to complete their transformations, but the intermediate generations consist only of individuals capable of laying eggs, so there are no males. Thus there is a generation consisting of males and females; the latter lay eggs, which produce grubs, which become chrysalides, from which come only individuals which lay eggs and no males. The grubs from these eggs become chrysalides which produce males and females. In the fungi in question both generations are perfect, and each will continue to produce a generation similar to itself, at any rate when on the same kind of plant. Another question of much importance which is still open is whether the Potato disease spreads down the stems from the leaves to the tubers, or whether the spores are washed from the leaves through the soil to the tubers. Mr. Jensen, of Copenhagen, holding the latter view, advocates earthing up the Potatoes so that the spores will be caught in the soil before they reach the tubers and laying the haulm over on one side so that the spores may be washed on to the space between the rows. The author says, "We consider the immunity from disease of earthed-up Potatoes with bent haulms is less owing to the power possessed by the earth of filtering the fungus spores, and so preventing them from reaching the tuber, than to the effect of the earth in keeping the tubers whole and sound." We cannot here go into the question, but warmly recommend those interested in the matter (and they are by no means few) to read the chapter on Potato disease for themselves. In reading this book we made notes of matters of interest which we cannot now allude to.—G. S. S.

GARDEN FLORA.

PLATE 458.

ERIGERON AURANTIACUS.*

To Dr. Regel, of St. Petersburg, our gardens are indebted for this beautiful orange-flowered *Erigeron*, besides a multitude of other hardy perennials, which through him have been introduced to cultivation from that hitherto unexplored region, Turkestan. From that quarter Dr. Regel has secured for our gardens a host of species of such genera as *Tulipa*, *Fritillaria*, and *Allium*, many of which are of considerable garden value.

ERIGERON AURANTIACUS comes from the higher mountain region of Turkestan. It is so well represented in the accompanying plate, that there is no need to describe it. It is certainly one of the most promising additions to the large order *Compositæ* made within recent years, the nearest approach to it in colour being the beautiful *Hieracium aurantiacum*. Of peculiar and rare merit as a subject for hybridisation, it possesses apparently the power to form quite a new race of garden flowers if properly worked upon, the colour of the flowers being so dissimilar to that of any of its congeners; for the value of its flowers alone it is already engaging the attention of market growers, and that circumstance may invariably be taken as a criterion both as to the usefulness of a plant and to its being of easy culture. As it proves perfectly hardy out of doors, it will in all probability before long become a general favourite, and that notwithstanding the fact that it has the reputation already of being difficult to grow. It is especially adapted for the rockery, where, however, it should always be planted in groups or patches, so as to render it most effective. In dry semi-shady places on sloping banks near the top, positions not very hard to find even on the smallest rockeries, it always grows more vigorously than in the full glare of the sun, and as the above conditions tend to lengthen the flower-stalks, the flowers also continuing longer in perfection, its value is considerably enhanced.

It generally grows from 6 inches to 12 inches in height, forming tufts or rosettes of leaves somewhat resembling those of *Aster alpinus*. The flower-stems, which are stoutish, never produce more than one flower in a head, and these are seldom less than 2 inches in diameter, and thickly set with bright orange-red coloured rays. The flowers are extremely handsome and showy, and are produced for the greater part of the season. It may be easily increased by division, as it produces offsets in abundance. It was first, we believe, sent out under the name of *E. pulchellus*.

Among others of this genus useful as border or rock plants the *E. multiradiatus* of the Himalayan Mountains takes a prominent place, and although very variable, it is one of the most valuable for the flower garden. Some of its forms come remarkably near to *E. alpinus* and its variety *Roylei* when starved or grown in poor soil, but in a rich compost and where it assumes its true character the difference is very striking. It seems to thrive best in low, damp, or shady situations, and as it is very useful for cutting and a very free flowerer, it should find a place in every hardy flower border. It has a fine, dense, compact habit of growth, seldom attaining more than 2 feet in height, and well furnished with broad, long-stalked leaves. The

* Drawn in Mr. Ware's nursery, Tot'enh'm, May 13.



flowers are produced one on each stem, of a very bright purple with pretty yellowish disc. Flowers in June, July, and August. Seed. *E. salsuginosus* and its variety *elator* are both very handsome plants, with pretty light purplish flowers produced in corymbs about 2 feet high. It grows well in the ordinary border, forming fine clumps of very charming light green shiny leaves, oblong in shape with long stalks. June and July. *E. speciosus*, *philadelphicus*, *glabellus*, *Villarsii*, and others will be found described in the last volume of *THE GARDEN* at page 123. K.

SEASONABLE WORK.

FLOWER GARDEN.

PREPARING FOR WINTER.—At no time during the present season have bedded-out plants been more brilliant than now; but their season is all but over, and preparation must be made for housing such plants as are intended to be saved, or, at any rate, for securing cuttings for next year's stock. Our plan with all tender kinds is to house them as soon as there is any danger of injury from frost, and replace the same with hardy plants to stand the winter. In this way the change of the garden from its summer to its winter dress goes on so gradually and imperceptibly as to be hardly noticeable till the whole has been donned in winter garb. *Coleuses*, *Alternantheras*, and *Iresines* are always the first to be destroyed, and as soon as this takes place, we substitute hardy *Heaths*, dwarf *Sadums*, *Thymes*, *Ajugas*, and small shrubs, such as *Betinosporas*, *Cupressus*, *Aucubas*, *Euonymus*, and *Iris*, the one aim in their disposition and arrangement being that the colours and design of the beds shall as nearly as possible be similar to those of the summer arrangement. Of course, summer gaiety is impossible, but a winter garden of coloured foliage, taking into account the changed season, is at least of equal merit to summer brilliancy. This combined summer and winter embellishment of the *parterre* of course necessitates a reserve garden for the accommodation of the necessary plants, but much of it may also be of a permanent nature, or at least consist of such plants as will do equally well for summer or winter. This fact we keep in view when making our summer arrangements, and work in all the hardy plants possible—perhaps at the loss of a certain amount of brightness; but this is more than counterbalanced by the lightened autumn labour of changing the plants, and the insured cheerful aspect of the beds in winter. Those who have not attempted the winter furnishing of *parterre* beds, and as a matter of course have not yet got the plants for doing it, may make a beginning by using the hardy dwarf carpeting plants that are now so generally used in summer bedding. A groundwork of these and a few small shrubs dotted over it is wonderfully telling in dull winter weather. Bulbs, such as *Hyacinths* and *Tulips*, may also be planted in masses, and the ground be covered with these live carpets, which also prove a good protection to the bulbs. Other ways might be suggested as to winter planting, but these will suffice to show in what direction to work in order to get rid of those ugly mounds of soil that disfigure our gardens all the winter.

GENERAL WORK.—This will consist in keeping flower beds and borders in trim condition by repeated picking over, cutting edgings, and tying up such plants as need it. Herbaceous borders are still very gay with *Japanese Anemones*, *Rudbeckias*, *Phloxes*, *Achilleas*, *Gladioli*, and *Asters*, but there are numbers of other plants that have done flowering, and are looking so "seedy" as to spoil the appearance of others; the stems of these, as soon as matured, should be removed, and in any case they should have the old flower-heads and rusty foliage cut off. The tall *Pyrethrums* and *Michaelmas Daisies* require stakes, and the like attention is needed by *Castor-oils*, *Hempes*, *Gums*, and other tall plants used as sub-tropicals. Pot up and house *Pelargoniums* that have been struck

in open borders, and those recently put in pots and boxes must soon have the shelter of a frame. *Violas* and *Calceolarias* should complete propagation for the present. All kinds that are being struck on a hot-bed should be taken out the moment they are well rooted, and be placed in other frames that can be well ventilated or protected as may be needed, it being necessary to successful wintering that the growth be of the most robust kind; and this cannot be unless great attention be paid to ventilation, which does not mean full exposure in all weather, but only in suitable weather. The clipping of hedges, moving of shrubs, and preparing soils in which to plant them, also digging and trenching ground for new plantations, are some of the other operations that claim immediate attention.

ORCHIDS.

EAST INDIA HOUSE.—Reference was made at page 139 to the abundance of thrips this year outside the Orchid houses. They could be shaken out of the *Dahlias* and *Carnations* in scores and hundreds within a few yards of the houses, but we have been able, by constant watchfulness, to keep them from the Orchids, even during the excessive heat in August. Now that cool weather with a moist atmosphere has set in, it will be easy enough to keep the plants clean and healthy. One of the best Orchid growers I know told me Orchids were seldom attacked by thrips if the cultural directions were right. During the excessively hot weather it was easy enough to keep the temperature right by day, and although the temperature was so high in the daytime, the nights, in comparison, were cool; but even if the temperature could be kept up without artificial heat, it is much better to have the hot-water pipes moderately warm, and with the wall ventilators open the temperature could be kept up easily to 70°. High night temperatures for Orchids are a mistake; but on the other hand it is a serious error in management to shut the houses up close, and do without artificial heat during a hot period. The atmosphere is much more congenial when there is a constant circulation of fresh air passing over the pipes under the stage, and then filtering upwards amongst the plants. During the summer the top ventilators may be opened a little all night. This causes a firm healthy growth on every class of plants, and it is needed to pass them through the long dark days of our uncertain winters. It is over-shading and neglect of ventilation combined with an over-moist atmosphere that causes spot. This disease was more prevalent before the culture of Orchids came to be so well understood as they are now. As the days shorten, so also must the supply of water be more carefully administered. A month ago *Phalenopsis*, *Saccolabiums*, *Angræcums*, and most other Orchids were making good growths and rooting freely in the moist growing *Sphagnum*; now they are still growing, but they do not require a third part of the water they had at that time, and the house ought to be allowed to get dry once every day. See that the leaves are sponged over to cleanse them from dust, and any plants requiring surface dressing should be seen to at once.

CATTLEYA HOUSE.—This house must now be treated much the same as the warmest house. The occupants of it require rather more sun than those of the warmest house. Some of the *Cattleyas* have completed their growths, but these have not yet become matured, nor will they do so without the aid of light and air. *Lælia purpurata* is just starting to grow, and the plants are also making roots freely. This is one of the Orchids that does not like to be repotted often; when the plants continue to make strong, healthy, flowering growths there is no need to interfere with them. The whole of the active roots will be found either working on the surface, down the sides of the pots, or amongst the drainage. It is as well once a year to place some fresh compost on the surface, and it can be put on easily without disturbing the roots. Good fibrous peat mixed with clean drainage and bits of charcoal are the most desirable materials for the roots to work into. The light,

air, and moderate warmth, so essential to the perfect maturation of the growths of *Cattleya Trianae*, *Mossiae*, *Dowiana*, *gigas*, and *Mendeli*, is exactly suited to the requirements of most of the *Vandas* and all the *Aerides* that require the temperature of this house. *A. crassifolium* likes best to be suspended in pans or baskets near the roof glass, while *A. Fieldingi* and *A. Lindleyanum*, two distinct and handsome species, also like very cool treatment at least cool *Cattleya* treatment. The moist, rather shady *Odontoglossum* house is not adapted to them. We have hitherto kept these and the *Cattleyas* well watered; now the water must be applied cautiously, otherwise we might get a visitation of "spot." We have grown Orchids for twenty years, and never had a plant attacked by it. Once a day let the paths and atmosphere of the house get dry. See that the shading is not put on earlier in the day than it is really needed, and roll it up again as early as possible in the afternoon. If the day is comparatively cloudy, with just occasional bursts of sunshine, the shading will not be required at all.

COOL HOUSE.—In the matter of shading, the cool house requires quite as much attention as the others do. Act upon the assumption that they do not require a blink of sunshine, and green, watery growths will be the result, especially if the house is a lean-to with a north aspect. Such a house will not now require much shading, and perhaps in some districts not at all. The right thing to do is to keep a watchful eye over the plants as the sun touches them in the afternoon, and if the effect of the sun is not unpleasant, the plants will stand it. Even if the blinds are let down they must be rolled up before the sun has gone off the glass. We have dwelt a good deal upon the importance of shading, and would urge upon all young gardeners to give this matter their earnest attention. Damping and watering here have been reduced to a very great extent. Twice a day is often enough to damp the paths, walls, &c. The plants, too, require to be more carefully examined. We like to see the growths ripening off well with that glossy reddish brown tint on the pseudo-bulbs so pleasant to the eye of the anxious cultivator; the brownish tint on the stiff, erect foliage is also a sure sign of robust health. This can only be attained by judicious shading, combined with a constant circulation of air over and under the plants. It will soon be time to shift any plants from this house to the *Cattleya* house that will not stand safely through the winter—*Odontoglossum vexillarium* and *O. Phalenopsis*, for instance. These two species require a plentiful supply of water during the summer months, but as they continue to grow during winter they must even then have water freely. Place them quite close to the glass all through the winter. In such a position the leaves instead of being green will be tinged with red—the evidence of good cultivation and robust health. This shifting of the plants from one house to another will give a good opportunity to clean the glass, pots, plants, &c. Making everything clean tends greatly to the health of the plants.

FRUIT.

VINES.—The late crop of *Muscats* will now be getting ripe and capable of bearing all the light that can be given to them. Where a large portion of the roots are in external borders the heavy rains have started an abundance of fresh laterals, and as these are now doing no good to the Vines or the Grapes, keep them closely stopped back to the main foliage, and at the same time remove all laterals down to the main bud from young canes and leaders intended for next year's fruiting. As the berries become nicely coloured, and the foliage shows signs of ripening, gradually reduce the temperature by ventilating more freely and keeping up a steady warmth in the pipes in preference to keeping the ventilation closed and trying to dispense with fire heat. Lady Downes, *Alicantes*, and the usual run of late Grapes, including *Alnwick Seedling*, will require a constant circulation

of warm air with liberal ventilation to keep forward the ripening of the fruit and wood before the long cold nights check the flow of sap. If the internal borders in which the surface roots are getting very airy require more water, and the berries show an indisposition to colour up to the footstalks, choose a fine morning for the operation, and give them one or two light waterings with generous diluted liquid at a temperature of 90°. The laterals in this house may be kept well stopped back, but not so close as the Muscats, as black Grapes always colour best under a good canopy of foliage. Hamburgs and other thinskin kinds intended for autumn use will require careful management, as too much fire heat will cause them to shrivel and the want of it will let in damp, and mould will soon destroy the bunches. Perhaps the best way to encourage this house is to reduce all laterals and to keep an even spread of foliage clear of the roof; to keep the glass, wood, and floors perfectly clean; to give the final internal watering on a fine day, and to cover up the border with a good layer of dry Fern or Bracken. Plants in pots should never be allowed to remain in anyinery after the Grapes begin to colour. Early Vines intended for forcing in November will be sufficiently matured to admit of pruning without delay. Vigorous young Vines that have been well ripened may be pruned in close, but old ones whose satisfactory crops compensate for appearance should be pruned to a plump bud. After pruning remove loose bark with the hand, but avoid the barbarous practice of scraping; wash well with strong soap water, and if insects have been troublesome dress with the following composition: One pound soft soap, and the same quantity of sulphur boiled together for ten minutes in one gallon of water; while hot add one pint of strong tobacco water, an egg-cupful of turpentine, and as much fine loam as will give the consistency of paint. Thoroughly cleanse the house, clear away and burn all loose surfacing, and surface the borders with rich top-dressings consisting of turf, bones, and rotten manure.

PEACHES.—The lifting, root pruning, and rearrangement of the trees in the early house may be proceeded with at the earliest convenience. To perform this work successfully, it should be taken in hand and carried out with as little delay as possible, and if the trees are completely lifted and removed to fresh stations, the roots will require a good soaking of water to settle the soil about them, when new growth will soon set in. To have ripe Peaches in May, houses planted with the earliest kinds of recent introduction may be started in December; but for giving the best quality of fruit this section must give way to such kinds as A Bec and Early Grosse Mignonne, two varieties which require a little more time to finish them properly. For succession we have Belle Beauce, Stirling Castle, Royal George, Violette Hâtive, and Bellegarde, still one of the best Peaches in cultivation. To the above for planting in the mid-season and late houses may be added a very superior old Peach named Dymond (not Diamond), Barrington, Gregory's Late, and Walburton Late Admirable, a large pale Peach equal to Noblesse in quality, but a shy setter unless the wood is thoroughly ripened. Where more than two kinds of Nectarine are grown, Lord Napier and Stanwick Elruge should have a place, the one to precede and the other to succeed the indispensable Elruge or Violette Hâtive. All the yellow-fleshed Nectarines are excellent. As time is now approaching for selecting trees from the nursery, the first consideration should be the stock, as the best kinds on bad stocks always end in disappointment and loss.

FIGS.—By removal of the roof lights and the withholding of water early-forced pot trees will now be losing their leaves and going to rest. If any small fruit remain on the points of the shoots rub them off, and leave all quiet and undisturbed until the end of October, when the annual thinning and cleansing may be performed. If, and by no means improbable, the trees have been attacked by spider or scale, repeated washings with strong soap water or Gishurst compound will

weaken the enemy before the final cleansing takes place. Where the early trees are planted out and space is limited annual root pruning is recommended. The period immediately preceding the fall of the leaf is the best time for lifting. Every tree should be well drained with broken bricks and old rubble, and the compost, consisting of strong turfy loam, old mortar, and crushed bones, should be mixed up and used in a dry state. Succession trees are still producing fruit, but it is quite time they were going to rest, as nothing is gained by allowing a tree to bear a few small fruits after it has matured two full crops. Remove all small Figs, wash well with the engine, and leave the ventilators open with gentle fire-heat until the foliage falls. Give particular attention to trees in late houses and cases against walls, as the scarcity of open-air Figs is very great, and a large dessert in September without a good dish of this delicious fruit is by no means complete.

CHERRIES.—The early-forced trees, now leafless and resting, must be kept as cool as possible. If established in inside borders, and the lights have been removed from the roof, shutters or some kind of covering should be placed over the roots to protect them from heavy rain, as an excess of moisture while the soil continues warm might start some of the most prominent buds. If any of the trees require lifting and replanting or replacing with others from the open wall, not a day should be lost in getting the work proceeded with. Good drainage is an important element, and the soil which suits the Cherry best is a strong calcareous loam, with a liberal admixture of old lime rubble and charred refuse. Animal manure should never be used with the soil, as a gross growth is generally affected with gum, perhaps the worst evil we have to contend with in the management of Cherries. Old trees which have been weakened by heavy cropping may be well mulched with rotten manure, or, better still, a good quantity of the exhausted soil may be removed and replaced with fresh compost, similar to the above, with the addition of a good sprinkling of bone dust. All border operations should be performed when the soil is dry and in a fit state for being firmly rammed without becoming adhesive. Examine the pot trees, repot if necessary, and see that the drainage is satisfactory. Where top-dressing is thought sufficient, work well down the insides of the pots with a sharp-pointed piece of iron, and fill up with turf, bone dust or rotten manure. Ram firmly and keep the trees out of doors for the present.

CUCUMBERS.—Plants in full bearing will now require to have more artificial heat to keep them going until those sown in August come into bearing. If they show a tendency to produce thickened fruit, remove them at once, unless they are wanted for seed, and top-dress with rich light loam, leaf-mould, or manure. Water well with warm diluted liquid and crop lightly. For autumn and winter work the pot system has many advantages, not the least being the facility with which fresh fermenting tan or Oak leaves may be placed in immediate contact with the pots. Of the two we give preference to sound leaves, as plants of all kinds seem to luxuriate in the moisture which arises from them; but some little care is needed in turning and exposing them to the atmosphere for a few hours after they are dislodged from the stove. Where young plants have filled two-thirds of the trellis, they may be stopped to induce a good break of laterals from the base, and as these will produce finer fruit with more certainty and less trouble than old plants in pits and frames, a few of them may be allowed to commence bearing at once. If brought on from the seed-pot in the genial heat produced by fermenting material, they are sure to be clean and vigorous, and capable of bearing a few fruit without being fed with strong stimulants. Where Cucumbers succeed Melons, see that a few good plants are always ready for filling up the different sections as they become vacant. Sow seeds at short intervals, and throw plants away in preference to turning them out after they become pot-bound. Nothing is gained, but much lost through their use.

STRAWBERRIES.—Let the most forward plant of the kinds intended for early forcing be examined and moved from time to time to prevent the roots from striking into the ground or bottom of the bed in which they are partly plunged. If, as is generally the case, they occupy very small pots they will require a supply of water every day to keep the balls from shrinking away from the sides, and an occasional syringe over with clean sulphur water will do no harm in checking spider and mildew, which sometimes get a hold of the plants and break out into a very lively form when they are introduced to the genial warmth of the forcing house early in the spring. This must be looked to. Pay also particular attention to the midseason and late kinds now making rapid growth, and move them to the most suitable places for ripening up the crowns and foliage. In unfavourable situations, where the crowns barely ripen in good seasons, we have always advised the appropriation of dwarf walls or raised shelves for ripening the roots as well as the crowns, as the pots can be arranged in single rows, turned and tended with the greatest care, instead of being crowded, as they often are, into a limited space in which the exclusion of warmth, light, and air might be looked upon as the first element of success.

PINES.—By this time the fruiting house will have been nearly cleared of summer fruiters, and the few left may be removed to a smaller compartment where they can have plenty of light and bottom-heat to swell and ripen off the fruit. If a complete clearance and cleansing of the pit has been decided upon, this work should not be delayed, as some little time will elapse before the new plunging material, be it tan or leaves, is in a fit state for the reception of the plants. They may, however, be placed on the surface or in shallow basins where they may remain until the violent heat declines, when the beds can be made up again without disturbing them. As many of these which have quite recently started into fruit will have to remain through the dead months of the year when ventilation will be reduced to a minimum, close arrangements must be avoided, and the crowns must be kept well up to the glass, otherwise they will become drawn and out of proportion to the size of the fruit. Although watering will not be so frequent, the plants must be examined every week, and those only which actually require water must be liberally supplied with warm diluted liquid or guano water, while all available surfaces capable of giving off atmospheric moisture will require damping to counteract the drying influence of fire-heat, as overhead syringing will have to be discontinued. Queens intended for early starting may be kept a little more on the dry side, and atmospheric moisture may also be reduced; but it will not be well to lower the temperature to any great extent until days become shorter and nights colder than they are at the present time. Plants which will make a spring growth before they start may be kept progressing for some weeks longer, and where, owing to the unfavourable state of the past summer, the fruiting pots are only partially filled with roots, the growing may be steadily continuous until we have a change to severe weather. An important point in winter management is cleanliness, internally by the removal of all other plants, and externally by the frequent washing of the glass. Shading on the brightest days is no longer needful—indeed, it is positively hurtful—but the blinds will do good service by being let down at night to economise fire-heat, and to prevent the loss of moisture by radiation.

INDOOR PLANTS.

STOVE.—Plants completing their growth should be encouraged to ripen their wood—a matter of the greatest importance as regards their blooming well next year. Under the head of deciduous flowering plants may be included Allamandas, the twining Clerodendrons, Vincas, Aristolochias, Bougainvilleas, Hexacentris, and Thunbergias, for though many of these are not, strictly speaking, deciduous in their habit, still, the most approved way of managing them is to so far check shoot

extension in autumn as to cause them to shed most of their leaves. All such plants as the above should now, as far as possible, be moved to the coolest end of the house, giving all the air that it is needful to admit at the end in which they are placed, and applying no more water than is requisite to prevent the leaves from shrivelling up, allowing them to flag freely each time before water is given. Achimenes, Gloxinias, Tydas, Curcumas, Gloriosas, the summer-flowering bulbous-rooted Gesneras, and Caladiums should also, where their tops are yet fresh, be kept dry enough to cause the foliage to die down gradually. Stephanotis that flowered early, and which have since made sufficient growth, should now be kept as dry as they will bear without injury to the foliage, but it is not well to expose the plants to so low a temperature, or the roots are liable to suffer and deficient bloom to be the result. Gardenias and Ixoras that have been up to this time accommodated with enough heat to keep up the formation of enough growth and flower-buds should not be allowed to get much below 70° at night. Under this treatment with a proportionate increase of heat in the daytime they will keep on flowering freely for the next two months. Winter-blooming plants annually grown from cuttings, such as Poinsettias, Euphorbia jacinthiflora, Eranthemum pulchellum, Plumbago rosea, Thysacanthus rutilans, Sericographis Ghiesbreghtii, and Begonias, should, if not already done, be put where they can receive sufficient heat to keep them from receiving a check on cold nights, or they will move slowly when an attempt is made to push them on into flower. Roses forced last winter or spring, and which have been stood out of doors during summer, should be got under cover before long, especially those intended to be forced early.

CHRYSANTHEMUMS.—Where these are grown on the planting out and layering system, with a view to produce dwarf single-stemmed plants, the time of taking up and potting needs to be regulated by the setting of the buds, but as soon as these are fairly set, and the layers are well rooted, they may be cut away from the stools and potted. If the soil in which they were layered is of a light sandy character, when taken up much of it can be shaken from the roots without breaking them, and this will enable the young plants to be put into comparatively small pots; they will bear soil much richer than most things. One-fifth rotten manure added to the loam in which they are to be potted will not be too much, as upon their being thus liberally sustained depends the quantity and full development of the flowers; press the material moderately firm in the pots, and thoroughly soak them with water to keep them from flagging. If after potting they can be shut up close in a cold house or pit, it will prevent any loss of the leaves, which, if the work is well managed, should keep wholly perfect down to the soil. Where dwarf, floriferous plants are wanted to stand on conservatory or greenhouse stages where tall specimens would be unsuitable, this planting out and layering method has much to recommend it, but the plants must be well attended to with water, so as never to let the soil get dry until the flowers are fully open, otherwise many are apt to go blind or open imperfectly. Pretty little plants can be had in 7-inch or 8-inch pots. The Pompon varieties and the medium-sized free-flowering kinds, such as the white Mrs. George Rundle and the yellow Mrs. Dickson, conform to this treatment best.

EPACRIS.—Where a good selection of these is grown it will be found that some varieties naturally flower much earlier than others. Amongst these will be most of the erect growing kinds; the time of blooming is in a great measure dependent upon the treatment to which the stock has been subjected, as Epacris generally set flower soon after they are turned out in the open air in summer, no matter what time that may be. They are not plants that bear forcing, but their blooming may be accelerated by keeping them a little close, such as in a pit or house where double Primulas and Cyclamens are being brought on say

where the temperature is not lower than 45° at night. Those thus encouraged to come on should be placed close to the light and should have plenty of air every day, otherwise a certain amount of shoot growth will take place, which it is desirable to avoid.

EPIPHYLLUM TRUNCATUM.—Where the stock of Epiphyllums is limited it will in most cases not be advisable to have them in flower until the beginning of the year, but where there is a sufficient number of plants to afford a succession, a few may shortly be put in gentle heat; for this purpose plants should be selected that bloomed early last winter, and which, after making growth, were well hardened up by exposure to the sun in the open air, treatment under which the bloom-buds will now show prominently at the points of the shoots. Where bright coloured flowers for intermixture with others of paler hue are in demand for bouquet-making or filling small vases, this section of Epiphyllums is very useful.

HYACINTHS AND OTHER BULBS.—Although the potting of these may, in the case of those that are required for blooming late in the spring, be deferred for some time, yet it is best to get the principal lot completed now, as it gives time for their being well rooted, upon which, before any excitement is attempted, much of their success in flowering depends. Out-of-doors, plunged in ashes or Cocoa-nut fibre, is still the best way of treating them, as they naturally root best where the sun comes full on the position in which they are set.

HELIOTROPES.—These are impatient of cold, but where sweet-smelling flowers are in demand they are indispensable through the late months of the year. Whether grown as standards, large bush specimens, or small stock, such as that struck from cuttings in the spring, they should soon be placed where a little fire heat can be used on cold nights. Those wanted to keep on blooming should be kept at from 45° to 50°, with plenty of air and light, for though the flowers will open in a lower temperature than this, still, if not warm enough, the plants will make but little after-growth, which is indispensable where a succession of bloom is looked for.

KITCHEN GARDEN.

TOMATOES which will not ripen should be cut just when tinged with colour, and placed over hot-water pipes in late vineries. This is a capital time to put in cuttings, and if selected from the smooth fruiting plants and those that bear satisfactorily, you will always keep improving the stock. Carter's Green Gage is much liked. Small fruits simply put into bottles filled with white vinegar, with a few Capsicums and Peppercorns, make an excellent pickle. If French Beans are not already sown, get them in at once. We had a houseful sown in boxes 3 feet long and 11 inches broad. Canadian Wonder we always sow for an autumn and early spring supply, but Osborn's for mid-winter is preferable in more ways than one. Do not forget to see that slugs are not eating the young Lettuce and Cabbage plants. We have been told to sow dust on them twice a week, and leave the rest to Dame Nature. So much has been said respecting Mushrooms, that the subject is getting threadbare; nevertheless we may be allowed to say we have had and are now having grand weather for making up beds, and as far as £ s. d. is concerned, there is no other kitchen garden crop so profitable. Our beds for autumn are now all spawned, sealed, and thatched with rough Grass (keeping out the wet after spawning is one of the secrets of success). We are now cutting Bracken for winter covering; when cut green the fronds keep intact. We find this invaluable for covering all kinds of Broccoli, Celery, and Mushrooms; in fact we cover everything up that is likely to suffer, even Lettuce and Endive. It is light and clean, and in most places it can be had in any quantity.

Ruta patavina.—This plant is, I consider, much overrated as a garden plant; indeed, as it grows with us it is hardly superior to the ordinary

garden Rue, with the exception of the vile odour of the latter. For a considerable time after we grew it it was very poor, until planted out in an open frame and well attended to until established. It is now robust, and assuming quite the habit of the common Rue. The flowers are bright yellow, the leaves a little longer than those of *R. graveolens*, but of course not so glaucous. This is all that can be said in its favour. For botanical collections it is a distinct and desirable addition to the Rue family.—K.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 238.)

NOTHOCHLÆNA HOOKERI.—A pretty *N. Americana* plant, which in outline has more the appearance of a *Cheilanthes* than a *Nothochlæna*; for its fronds, whose under surface, with the exception of the midribs, is entirely and thickly covered with a waxy powder, have a sort of pentagon shape, and consist of a middle portion of rhomboid form supported on a short, but narrowly winged stalk and two lateral divisions quite sessile. Thus the whole frond is five-fingered, with the middle point the largest and the two lower ones smallest. The upper surface of these fronds is smooth and of a dull, rather dark shade of green, while the powder with which the underside is copiously coated greatly varies in colour, sometimes being almost white or pale sulphur-yellow, but on some specimens it is quite a dark deep yellow. The plant is of upright habit, and requires an intermediate house temperature.

Fronds about 3 inches high, almost pentagonal, although composed of three divisions only, as the side divisions are pinnatifid on the upper side, but are provided on the lower side with a single basal segment much elongated. These are borne on clustered stalks about 6 inches high, very wiry, of a reddish brown colour, smooth, and shining, bearing a few scales at their base. Rootstock, like that of most Ferns growing in clefts of rocks, is creeping, but rather short, and well covered with rigid lanceolate scales of a blackish brown colour.

N. LEVIS.—A very handsome species from Mexico, and one which now-a-days is very seldom seen in cultivation, possibly owing to repeated failures produced by its being generally kept in too warm a temperature. Though reckoned somewhat difficult to manage, it is one of those plants which amply repay any extra care bestowed upon them; whoever has had the good fortune to see it grown as it was only a few years ago in the select collection of the late Mr. S. Rucker, where, under the care of Mr. Pilcher, it formed a most handsome basket, the admiration of every visitor, will readily admit the possibility of success. It only requires cool, or at the most intermediate, house temperature and a dry situation, such as a hanging basket, to grow it in perfection. It is also the way in which the beautifully silvery underside of its long and drooping fronds is shown off to greatest advantage.

Fronds from 12 inches to 18 inches long and simply pinnate, with pinnae entire and slightly undulated at their margins. They are borne on stalks of a woolly nature, round, and very brittle, which are produced from a thick creeping rhizome, whose extremity is very densely covered with subulate, silvery scales. The upper surface of the frond is of a glaucous green colour, whereas the whole underside is densely clothed with long scales, white on the young fronds, but of a brown colour in the matured ones. Sori very dark, protruding through the tomentum on the margins of the pinnae only.

N. LANUGINOSA.—This is one of the few species native of the south of Europe, Madeira, the Azores, and Canary Islands. Though not so strong a grower as *N. canariensis*, of which more common species it shares the habitats, it is nevertheless a handsome evergreen kind, requiring only cool treatment all the year round and to be kept particularly dry during the winter months. It seldom exceeds 8 inches in height and is well adapted for pot culture, or for planting in crevices of the cold rockery where it should be planted with very little soil around it, and in an elevated and exposed situation.

Fronds produced in tufts and of very compact, rigid habit; they are bipinnate, from 6 inches to 8 inches high, with pinnae opposite and closely set together. Their upper

surface is of a peculiarly dark green, while their underside is wholly covered with very long woolly scales, which give the plant quite a distinct appearance, through their spreading themselves some distance beyond the margin of the pinnæ.

N. MARANTÆ.—This exceedingly pretty species, the dwarfest of the few kinds in cultivation, whose habitats are situated in the south of Europe, Madeira, Teneriffe, and also in the north of Asia, is seldom met with in anything like good and thriving condition, owing to the same mistake in culture, which applies to other kinds enumerated above, and which consists in growing it in too much heat. This is a plant which not only prefers, but really requires, thoroughly cold treatment, the most convincing proof of which may be safely derived from the way in which it is grown with signal success by Messrs. J. Backhouse & Son, of York. Nowhere else, perhaps, is it brought to such perfection, and yet very little trouble is taken with it; during the summer it is grown outside in the open, and during the winter the plants are simply put into cold frames, where frost often penetrates, and where they are only protected from excessive wet weather, which to them is much more injurious than cold.

Fronds broadly lanceolate, bipinnate, produced abundantly, and disposed in compact tufts from an underground short rhizome, and seldom measure more than 6 inches high. It is similar in general appearance to *N. canariensis*, but of dwarfier habit and with pinnæ less obtuse, and fronds of thinner texture than in that species. Pinnæ entire and closely set, thickly covered below with reddish brown scales; upper side of a dull, dark green colour.

N. NEWBERRYI.—This evergreen North American species to a great extent resembles *Cheilanthes tomentosa*, also from the same habitat, but it is whiter, less woolly, and differs generically in the total absence of an involucre similar to that of all *Cheilanthes*. In the fertile fronds the sporangia form a blackish line around the edge of the segments, which are perfectly flat and have not the least attempt at forming an involucre. The sporangia are so few as to form but a single marginal row, and are when fully ripe very black, in fact darker than in any other member of the genus. It is easily distinguished from all other species from North America, not only by its fronds being fairly tripinnate, and a few of the pinnules nearest the midribs being even again divided, thus rendering the fronds sub-quadrripinnate, but also, and principally, by their peculiar colour, which on both surfaces is produced by a web of very fine hairs. This covering is very heavy on the under surface, but so thin on the upper that the green colour of the frond may be seen through it; it is very variable in colour, deepening as it does with the age or state of maturation of the fronds, which when young are creamy white, and of a pale rusty brown tint when fully developed. It is of erect habit and makes a very pretty pot plant, requiring only the heat of an ordinary greenhouse.

Rootstock thick, creeping, more or less branched, matted together and covered with very narrow, dark brown scales; fronds lanceolate-oblong, tripinnate, borne on erect, tufted, slender, wiry stalks, about 6 inches long, of a very dark brown hue, though in young state they are covered with a rusty whitish wool. Pinnæ triangular-ovate, the lowest ones rather distant, but not reduced in size, and measuring about 1 inch long; ultimate segments very minute and much crowded.

N. NIVEA.—A most delicate and handsome species from Tropical America, and deservedly one of the most popular in cultivation. In general aspect it is a counterpart of the well-known *N. chrysophylla* or *flavens*, which species it resembles in most particulars, though not quite so robust, and it is slender and more drooping in habit. The most distinctive character of this extremely interesting plant, however, lies in the colour of the underside of its flexible fronds, which are densely clothed with a pure silvery white ceraceous powder, through which the abundant and naked black sori protrude; these are disposed all round the margins of its roundish small pinnæ, which character fully accounts for its being generally called the silver Maiden-hair; the blackness of the very stalks still adds to the delusion, as their slender and shining nature is very similar to that of most *Adiantums*. It is a most useful plant where small baskets are required for the warm house, and should be kept particularly near the

light, and in a position where no syringing is likely to reach it. Although of delicate texture, its graceful little fronds are very tenacious, and remain on the plant a very long time.

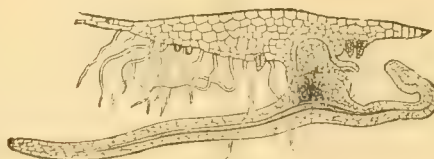
Rhizome short, thick, scaly, and keeping well above the surface of the soil. Fronds tripinnate, from 8 inches to 12 inches long, abundantly produced and borne on slender, tufted, jet black stalks of about equal length. Pinnæ distant and spreading, of a bright green colour on their upper surface, whereas the pure white of their underside forms a striking contrast with the jet black sori disposed round them.

PELLÆA.

FERN SPORES V. SEEDS.

Would you kindly explain the difference between a Fern spore and a seed?—EMBRYO.

* * If the seed of a Bean be carefully cut open and examined it will be found to contain the



Section of prothallus.

embryo—i.e., beginning—of a perfect plant, and in very large seeds a miniature plant may be seen by the naked eye. A seed may be likened to a



Prothallus with sporangium.

fresh egg, which contains the embryo of a bird. In the case of a seed the plant is there ready to germinate, and its characters were formed long



B



A

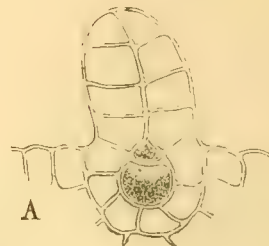
A, cell containing fertilising organs; B, spiral fertilising organ more magnified.

before the seed arrived at maturity, namely, when the ovule was fertilised by the pollen. The spore of a Fern may be likened to a perfect flower, such, for instance, as a Primrose. It contains in an, as yet, undeveloped state the organs which combine to produce a young Fern. When a spore falls or is placed on any moist, warm medium it begins to vegetate by emitting a little hair-like growth, which develops into a flat leaf-like expansion resembling a Liver-wort (*Marchantia*). On the under side of this green layer, which is called a

prothallus, are developed little cells containing tiny coiled threads, and these threads possess the power of moving, or, rather we will say, they move mechanically owing to the action of moisture on their coiled bodies. These are the fertilising organs, analogous to the pollen of an ordinary flower. Close to the cells containing these fertilising organs little sacs or cells are formed, on the top of which something analogous to the style of a flower is developed. These are the female organs. As growth proceeds the little threads or male



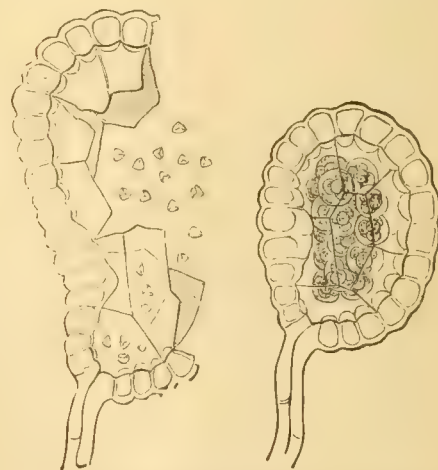
B



A

A, longitudinal section; B, transverse section of a fertile sac or cell on the prothallus.

organs reach the sacs or females and fertilisation takes place, and the first process in the formation of a new plant is thus completed. After this the young Ferns begin to show themselves along the axis of the prothallus, and as they become strong enough to look after themselves the prothallus withers away. Sometimes several plants are developed by each prothallus, and when it is remembered that each prothallus is the product of a single spore, it will be seen how widely different the latter is from a seed. The writer has divided a prothallus of *Todea superba* into a dozen pieces, and from each one a young plant has been obtained. The peculiar nature of the



Spore cases, showing how the spores are discharged.

reproductive organs of Ferns may be seen in the large number of cases of spores having germinated freely, but failed to produce plants, and this failure is explained by the interference in some way or other with the process of fertilisation. Sometimes one of the sexes is missing from the prothallus, and sometimes both sexes fail to appear. Instances have been known of the prothalli having lived and grown for several years without ever showing signs of developing plants. The hybrid Ferns recently raised by Mr. Bausé and others are supposed to have been obtained through sowing spores of two species of Ferns

together, and thus bringing the sexes of the two kinds within reach of each other. All this beautiful arrangement can only be observed with the aid of a powerful microscope, but although we may not be able to follow the whole process through, we may yet see, by noting the results of Fern spore development, that what science teaches us in this matter cannot be far from correct.—D.

THE BEST HARDY HEATHS.

EVERY hardy member of the Heath family is beautiful, and may be had in perfection with but a tithe of the care and trouble bestowed upon tender exotics. Where a collection of Heaths is grown, flowers to a greater or less extent can be obtained nearly throughout the year, while some, especially among the varieties of the Heather, form dense cushion-like tufts, which are very pretty at all times, and are desirable rockwork plants. The Heaths can be employed in various ways in gardens. They may be arranged in beds or groups, either mixed or in clusters of one kind. In mentioning this method, I am reminded of the beauty for several seasons of a bed planted with the red, white, and parti-coloured varieties of *St. Dabeoc's Heath* (*Daboecia* or *Menziesia polifolia*), which was a mass of bloom throughout the summer and well on into the autumn. Again, grown in this manner the white and red varieties of the *Ling* make a goodly show towards the end of the summer. Perhaps, however, the most suitable way to deal successfully with hardy Heaths is to employ them for carpeting exposed places; that is, as it were, to form a groundwork, from whence might be allowed to spring at intervals specimens of any choice trees or shrubs which would not be in any way interfered with by the surface-rooting Heaths. This method of thus carpeting the ground is only a reproduction from Nature, as may be often seen on our hills and commons where the large isolated trees are not one whit the worse for the floral carpet from whence they spring. Where a space is set aside for the larger growing Ericaceous plants, these smaller-growing kinds can well be employed as ground shrubs, for the same soil is favourable to the development of both. By this means the spaces between, say, large single specimens of *Rhododendrons* could be made as interesting and as attractive later in the season as the *Rhododendrons* themselves were when in flower.

Much might be done towards the embellishment of woodland walks by employing the hardier and more vigorous growing kinds, while the smaller ones are suitable gems for the rockwork; indeed, in certain arrangements all of the Heaths are valuable rockwork plants, and the length of time the flowers of hardy Heaths last in water renders them all the more valuable. Sometimes the various hardy Heaths are classed under the head of *Erica*, while at others they are divided into *Callunas*, *Gypsocalis*, *Menziesia*, and *Daboecia*, as well as *Erica*. A list of the principal hardy kinds would include the following:—

ERICA OR CALLUNA VULGARIS.—The common Heather shows a far greater variety in habit, colour, stature, and in general appearance than any of the rest, as some individuals form large scrambling masses, while others are but dense Moss-like tufts. Such being the case, there is, as a matter of course, a great number of named varieties, among the most distinct being *alba minor*, a compact, but slender growing kind with pure white flowers. *Rigida alba*, of stouter and more spreading growth than the preceding, with larger spikes of blossom. *Pubescens alba*.—This is a free-growing kind, with massive spikes of handsome white flowers, and is besides very interesting from the pubescent character of the foliage. *Aurea*.—There are a couple of distinct kinds sometimes met with under this name, one being deeper in colour than the other, indeed almost of a coppery tint. Both are of low spreading habit and very constant in colour. *Coccinea*.—This is a form with deep coloured flowers. *Alporti*.—This is a bold bushy-growing kind, with dark purple blossoms. *Variegata*.—In this variety the ordinary

foliage is interspersed with white. *Searlei*.—This fine white-flowered kind is valuable from flowering after most of the others are past. *Pygmæa*.—This may be taken as the farthest removed from the ordinary kind, as it forms a dwarf mossy-like tuft from whence flowers are but sparingly produced. *Flore-pleno*.—As its name implies, the flowers of this variety are double and withal very pretty either individually or in a mass. The habit of the plant is free and vigorous. *Tenuis*.—This is a pretty slender-growing kind with deep coloured flowers.

E. CARNEA OR HERBACEA.—If arranged according to their season of flowering this would occupy the first place, as it blooms during the early months of the year if the weather is not too severe, and continues till spring is well advanced. The flowers of the spring Heath are of a rosy red colour except in the variety *alba*, in which they are white.

E. CINEREA.—This common British species flowers as a rule during July and August, at which



Erica Maueana; flowers magenta (natural size).

time it is very attractive. Besides the ordinary form with purplish flowers, there are several others enumerated in different catalogues, among the most distinct of which are *alba*, *atro-purpurea*, and *coccinea*, the distinctive characters of which are indicated by their names.

E. TETRALIX.—The cross-leaved Heath is also a common British kind and as often seen covering large patches of ground; it is very beautiful. Other forms besides the common one are *alba* and *rubra*, while *Mackiana* is by some considered a variety, and by others a hybrid between *tetralix* and *ciliaris*.

E. CILIARIS.—This Heath is much less frequently met with than the preceding, but is in all respects a very desirable and highly ornamental kind. It is of low growth with spikes of comparatively large purplish blossoms.

E. MAUEANA, herewith figured, is by far the finest variety, as may be inferred from the illustration of it herewith given. The flowers and the spike are larger than ordinary, and the colour is

richer. It is a neat habited variety, forming large dense tufts which for several weeks towards the end of summer are furnished with a profusion of flowers. It was beautifully in flower a short time ago in the rock garden at Messrs. Paul's nurseries at Broxbourne, and it was from one of the plants there the present drawing was made. It is apparently not a common variety, but nothing much is known of its history. Mr. Maw, of Benthall Hall, near Broseley, from whom we sought information respecting this Heath, writes as follows: "Although this Heath seems to have been named after me, I am sorry that I can give you but very little information about it, and I am not sure whether it came from Cintra, in Portugal, or from the Asturias. It is very close to *E. ciliaris*, and I do not think that any botanist would recognise it other than as a slight variation from the type. Some years ago the late Mr. McNab was staying here and took a root of the Heath to Edinburgh, and, I fancy, must have named it after me."

ERICA OR GYPSOCALLIS VAGANS (the Cornish Heath) is of free, vigorous growth, reaching a height of a foot or two, and bearing densely packed spikes of pale purplish red blossoms. From the profusion in which the flowers are borne, it is very showy when in bloom, especially the deep-coloured variety called *rubra*. The white form (*alba*) is also very pretty.

E. MULTIFLORA is valuable from the fact of producing its rosy red blossoms after all the others are over, for they are often borne till autumn has nearly passed away.

There yet remain a few larger growing Heaths, some of which, where they are not injured by frost, forming good-sized bushes. One of the largest is the *Tree Heath* (*Erica arborea*), an upright-habited bush, that bears a great profusion of small white flowers during the earlier months of the year. Unfortunately it is tender, unless in favoured spots, so that it is seldom seen in perfection, except in the south of England. An allied kind (*E. codonodes*) seems to be rather hardier than the last named, which in general characters it much resembles. The principal difference is in the flowers, which are somewhat larger and more bell-shaped in *E. codonodes* than in *arborea*. A large plant of *E. codonodes*, when covered with its delicate white bells, is in early spring a beautiful object.

E. AUSTRALIS, where not too much exposed, commences to open its reddish blossoms by the beginning of April, and remains in beauty a long time. It is a large-growing kind, and, like the last named, rather tender.

E. STRICTA is of dense, upright growth, a yard or more in height, with bright purplish flowers borne about the end of summer on the upper parts of the shoots.

E. MEDITERRANEA.—During the spring this is very attractive, as at that time it is thickly studded with reddish blossoms. It is liable to be injured during severe winters, but where sheltered it reaches a height of 6 feet or 7 feet. The variety *hibernica* attains lesser dimensions than the typical form. T.

Auriculas at Baskin Hill.—"Delta" in his paper on Baskin Hill (page 178) notices Mr. Tymon's collection of Auriculas. To any person but Auricula growers that paragraph is not of much interest, I should suppose, but to Auricula growers it must be a curiosity. He speaks of inferior sorts having been weeded out, nothing but "crack" sorts left, and "there are no Champneys, Neils, and such like rubbish." I, as an Auricula grower, firmly object to Colonel Champneys being called rubbish. It is, I think, the best Auricula Mr. Turner has raised in the stage class, and I believe the first of the blue grounds ever sent out. It is a very beautiful variety, a strong grower and handsome trusser, and perhaps only surpassed by Wilson's Helen and Simonite's Frank Simonite. General Neil is all round a fair green edge when well grown; its great fault is that it increases very rapidly, and hence soon spares something for the "rubbish" heap. However, apart from that

(I speak now to Auricula growers only), what is the value of a writer's opinion who knows so little of Auriculas that he speaks of Acme as Light-body's?—H. S. B.

FRUIT GARDEN.

FOXY GRAPES.

THE question of Black Hamburg Grapes not colouring has been frequently discussed. I have pondered over the pros. and cons. of it for many years, and have pretty well come to the conclusion as to the true causes of bad colouring. The most frequent is over-cropping. This is probably the reason why the Grapes alluded to by "Another Scot" do not colour. The Vines, whose roots were outside entirely, must also have been forced rather rapidly. They were started about the end of January, and commenced to colour in May; this was combined with a heavy crop, and under such conditions one would scarcely expect the fruit to colour well. Probably the reason why the fruit colours better in one house than in the other is the fact that the one is forced, while the other is not. In the late house there is but one cause of the fruit not colouring, viz., over-cropping. In the early house we find two reasons, viz., over-cropping and early forcing. The late house is, I should say, over-cropped, and although the result of it is not yet apparent, it will probably be seen in the course of a year or two. From sixteen to twenty-six bunches, averaging $2\frac{1}{2}$ pounds on a rod 12 feet long with the usual lateral growths, is over-cropping to such an extent that no Vines could long sustain it. Indeed, in this case it cannot be difficult to ascertain the cause of the Grapes failing to colour. When the house was divided as soon as one half was forced the Grapes did not colour, while the other half continues to do so as before. Over-cropping therefore seems not sufficient to cause it, but early forcing and over-cropping combined has done so. Nearly every Grape grower will agree with me when I say that in a house of Black Hamburgs if one Vine is over-cropped the fruit will not colour well, while the Vine next it under-cropped will do so; not only is this so, but if the bunches are thickly placed and of large size on one part of the Vine they will not colour so well as those on another part where they are not so thick. In many cases, too, the Vines do not get sufficient water at the roots. They should get a good soaking when the fruit begins to colour, and if it is thought they are too dry at the roots before it ripens, water again. An over dry atmosphere is also to be avoided when Grapes are colouring.

J. DOUGLAS.

GRAPES SHANKING.

"T. S. M.'s" query (5244) on this subject (p. 220) covers a deal of ground, so to speak, and a small pamphlet in fact might be written in reply without exhausting the subject. Permit me to throw out a few hints that may be of use to him. To begin: The darkened glass I presume is what is usually called rough plate glass, which is not at all suitable for Vine culture. There may be odd cases where fair fruit is procured from Vines growing under it, but they are rare; consequently he should if possible get the house reglazed with good 21-oz. to the foot English glass. Chance, of Birmingham, and the St. Helen's Glass Co. are both good makers, and it can now be purchased very reasonable. Secondly, 9 inches is too near the glass for the wires to be fixed; 16 inches is better. Under rough plate glass the foliage may not suffer at 9 inches, but under clear glass I have often seen it scorched. Thirdly, Azaleas as a rule are better out of vineries at all times; still there are scores of gardens where good Grapes are grown in vineries which have Azaleas in them during the time they are making their growth, and also in the winter months; in this latter case of course it is not desirable to have them in when the Grapes are required for winter use. It is absolutely necessary to exercise great care in keeping down thrips during the time the Vines are making

their growth; this can be done fairly well by plying the syringe well amongst the Azaleas every evening, and once a fortnight in the summer laying the Azaleas down and giving them a douching with soft water in which half a pint of Griffiths & Avis's, of Coventry, Tobacco juice is mixed to each gallon of water. We find this the best insecticide for thrips on Azaleas. Fourthly, "T. S. M.'s" vinery requires more ventilation. If he cannot conveniently have ventilators on each side of the ridge at top, he should by all means have openings made in the wall and wooden shutters 2 feet by 9 inches in width fixed every 6 feet along the bottom of his vinery. These could be worked singly, or by fixing a rod and lever they could be moved all at once. Personally I like all bottom ventilators, when wooden shutters, to hang at the bottom and open outwards from the top. Fifthly, he should by all means have openings made in the wall below the surface of the ground, so as to allow the Vine roots to get out into a well-made outside border, instructions for making which have so often been given in THE GARDEN. With Muscats I think this is almost more necessary than with many other varieties of Grapes, though I am of opinion that all Vines are better in every sense of the word where the roots can run into outside borders well prepared for them. If "T. S. M.'s" soil is of a very sandy or chalky nature, some well pulverised clay would be a great advantage if mixed with it, say about a sixth part to the whole. I have seen Muscats growing on chalky soil almost quite cured of shanking by simply adding some clay to the border. The work was done in the autumn before the clay had got soaked by the autumn and winter rains. Inside borders, if well drained, require a quantity of water while the Vines are growing especially. Perhaps "T. S. M." has not given them sufficient; this would add to their shanking propensities.

H. J. C.
Grimston.

Our short Apple crop.—Judging by the following clipping from an American paper, the Britisher's necessity is the American's opportunity. It runs: "The English Apple market still presents a very encouraging outlook for New England and New York raisers of Apples for exportation. The crop of English fruit is light and poor, and large supplies of American and Canadian fruit will be wanted at fairly remunerative prices. The total imports from United States, Canada, and Nova Scotia to Great Britain during the past season were as follows: Liverpool, 46,661 barrels; Glasgow, 29,685; London, 4843; other ports, 343 barrels; total, 1883-84, 81,532 barrels; season of 1882-83, 400,000 barrels; 1881-82, 239,000 barrels; 1880-81, 1,330,000 barrels; 1879-80, 435,800 barrels."

The season and Grape crops.—I have spoken before as to the colour of Grapes this season, and write again to say that our late crop has this year been practically grown without fire-heat, and with both back and front ventilators wide open day and night nearly the whole summer. The consequence is that the crop has had time, and the fruit has coloured perfectly even where the crop is heavy—Alicante, Lady Downes, Barbarossa, Alnwick Seedling, Madresfield Court, and Mrs. Pince all alike. I have never had Mrs. Pince quite black before, but it is now, September 12, nearly as black as the Alicante. Black Hamburgs cropped at the rate of nearly 2 lbs. to the foot run of Vine rod, are equally well coloured, and they have had no fire-heat either, except at the beginning, to exclude frost when in flower. I attribute the colour to nothing else but the abundance of air and the absence of any forcing by fire-heat.—J. S. W.

The Seckle Pear.—When visiting an old garden a few days ago I came upon a standard tree of this fine Pear, bearing a good crop for the season of well developed fruit, nearly ripe. The latter is never very large, but when well matured the flesh is yellowish white, fine, melting, and very juicy; flavour sugary, rich, and luscious, with a peculiar aromatic spicy perfume. The tree is

naturally a slow grower, scarcely ever attaining a great height—some say never attaining a height of more than 20 feet; its habit is upright and very compact, making a broadly pyramidal head. It is also exceedingly tardy in coming into bearing, but when it does it crops profusely. Some cultivators thin out their trees severely; its great fruitfulness necessitates much thinning in order to ensure large and handsome specimens. It is said to do much better on the Pear than on the Quince stock. It is an American variety. It is recorded that the original tree was found growing on the estate of Mr. Seckle at Philadelphia; hence its name. It has been stated to be a seedling from Rousselet de Reims, one of the oldest and best of early Pears, but one that does not keep long. Dr. Hossack first sent trees of it to Chiswick in 1819.—R. D.

Summer's growth on fruit trees.—The following are remarks on the summer's growth this year on some hardy fruits in a state of nature and some cultivated fruits in trenched ground. Being engaged in summer pruning a collection of pyramid Pears, standard Apples, pyramid, standard, and bush-shaped Plum trees, and pyramid and bush-formed Cherries, it occurred to me that it might prove interesting to some of your readers to compare the growth made by wild fruits, such as the Crab, wild Cherry, and the Black Thorn or Sloe, and those that are cultivated. I find by careful measurements, made on August 11, that the Crab, a young, vigorous bush, had made a growth of 1 foot 9 inches, size of leaf 2 inches by $1\frac{1}{2}$ inches; Wellington Apple 2 feet 10 inches, size of leaf 3 inches by $2\frac{1}{2}$ inches; Warner's King Apple 3 feet 3 inches, size of leaf 5 inches by $3\frac{1}{4}$ inches. The Wild Cherry, a young, vigorous tree, had made a growth of 2 feet, leaf $4\frac{1}{2}$ inches by $2\frac{3}{4}$ inches; Bigarreau 3 feet 10 inches, size of leaf $6\frac{1}{2}$ inches by 3 inches; May Duke 2 feet, size of leaf 6 inches by $2\frac{1}{2}$ inches; Morello 2 feet 2 inches, size of leaf $4\frac{1}{2}$ inches by $2\frac{1}{2}$ inches. The nearest relative of the Plum family in a state of nature is the Black Thorn or Sloe, and this has made a growth of 1 foot 3 inches, size of leaf 1 inch by $\frac{1}{2}$ inch. The Winesour Plum has made a growth of 4 feet 6 inches, size of leaf 3 inches by 2 inches; Victoria 5 feet, size of leaf $4\frac{1}{2}$ inches by 3 inches; Jefferson 4 feet, size of leaf $3\frac{1}{2}$ inches by $2\frac{3}{4}$ inches. These measurements were all taken from young, vigorous trees four years planted in the case of the cultivated trees, and the measurements of the wild fruits from a piece of ancient wood close at hand.—R. M. S.

Planting Strawberries.—This is the best season for forming new beds of Strawberries; young runners being now well rooted, and the late copious rains having left the soil in good condition for planting, no time should be lost in getting the work pushed forward. Few crops which we cultivate are so much benefited by deep cultivation as the Strawberry, for in seasons of drought the roots strike down deeply and find moisture if the soil is loose and friable, but if hard and unbroken the fibres spread out horizontally, and if a protracted spell of dry weather should occur at the time when the crop is swelling the crop is seriously affected; therefore spare no pains in preparing the soil by deeply stirring it and burying some manure in the bottoms of the trenches. As regards planting, there can be no question that young plants bear the finest fruit the first season, and if carefully tended by layering in pots or turf and carefully transplanted and liberally treated with stimulants at the root, it is surprising the number and size of fruit that one-year-old plants will produce. On a bed of young plants which I saw this year that had been mulched with good manure and soaked with liquid frequently in spring the fruit lay in heaps around the plants. At the same time, those who cannot give such liberal culture need not be deterred from making young Strawberry beds, for on the very smallest and latest of runners that we pricked out in nursery beds on poor light soil scarcely one failed to send up a good truss of bloom and to perfect several fine fruit, which, if not equal in size to those more liberally treated,

nevertheless formed in the aggregate a fair crop for the space occupied.—J. G., *Hants.*

KITCHEN GARDEN.

GARDENING IN THE SCILLY ISLANDS.

WITH the increased facilities for conveyance of goods to Penzance, the Scillonians may hope to reap an annually increasing share of the profits that now go to the Channel Islands and France for such vegetable produce as early Potatoes, Asparagus, and Seakale. The light soil, sandy and deep, of the islands is admirably adapted for the growth of Ashleaf Potatoes, and the tubers turn out quite clean enough for market without washing. The Potatoes are large enough to be dug two or three weeks before those in South and West Cornwall, and bevvies of workmen cross over from Penzance to assist in the taking up and preparing of the Scilly crop, and get back in time for the commencement of similar work at home. Being also a week more precocious than Jersey, every encouragement is given to a prosperous trade, except the heavy dues, owing to lack of competition for freightage.

POTATO CULTURE.—The largest grower on the islands is Mr. Dorrien-Smith, of Tresco Abbey, on whose farm every convenience for stacking the imported seed and producing a maximum of work with a minimum of labour has been erected. By reason of quick deterioration, fresh seed is imported every year, four-fifths of it being Myatts' Ashleaf. A fact worth noting in this respect is that the Potatoes grown in the cold fenny soil of Lincolnshire are, when transplanted to the warm, dry soil of these islands, fully eight days earlier than those imported from counties like Somerset. The quantity imported by Mr. Dorrien-Smith is forty tons, which are landed at Tresco in the month of October. The Potatoes are then stacked by an arrangement of stools and boarding tier upon tier till within a yard or so of the roof of a well-lighted loft. Each tuber is placed on end, so that it can form a shoot, and the temperature in the loft can be raised if required. The planting out is done in September, in parts of St. Mary earlier. The manure used has been piled up during the intermission between the plantings, and consists of layers of seaweed, sand, and farmyard manure, with some superphosphates added to fix the ammonia. The amount used at the time of preparing the ground is as much as 60 tons per acre. This, however, is also to serve for the Mangolds and Turnips, which are sown soon after the digging of the Potatoes. Later on, chiefly at the time of earthing up, a second application of 14 cwt. per acre, consisting of 8 cwt. of guano, 4 cwt. of bone dust, and 2 cwt. of superphosphate, is added. If the young foliage has been frost-bitten, this dose soon penetrates to the roots, and supplies re-invigorating force. To protect the crop from the violent winds, which, when from the west, often suspend work, traffic, and even walking about, large mackerel or pilchard nets are spread just above the haulm. These nets are upheld by posts driven into the ground, every seventh row being left unplanted for them and for carrying off the water from the hills, the fields being for the most part on a slope. During a gale of wind, by the pressure of the nets, the haulm is all laid in one direction, and is thus prevented from being whirled about and torn out of the ground. The nets if required can be restretched and their pressure removed. Other ways of protecting are by wind screens made of reeds fixed on iron hurdles and by Escallonia macrantha hedges.

In a favourable season the Potatoes can be lifted at the end of April, but the usual time is May. They have now made a name for themselves in the markets, and are a brand that usually fetches the best prices obtainable. As a proof of the quickening nature of the soil, it may be mentioned that the Mangold and Turnip seed, sown on the removal of the Potatoes from the ground, germinate so quickly, that the fields are green again before the close of the month.

CULTIVATION UNDER GLASS is also carried on extensively. When the Potatoes are taken out the frames are utilised for Tomatoes. The plants are trained close to the ground and the foliage is cut away from time to time to expose the fruit to the sun. To keep the fruit clean a carpeting of reeds, any quantity of which can be got in Tresco, is spread over the soil. Grown in this way the yield is enormous. Out-of-doors they are grown against reed screens, and in some of the gardens are planted out in rows like Potatoes. This latter method has not been a success chiefly on account of the disease, and moreover if in a dry season they escape the destroying angel, the greater part of the crop never ripens. Mr. Vallance, the gardener at Tresco Abbey, has with great skill planted a small lean-to house in the following manner: At a distance asunder of 2 feet 6 inches a number of posts have been driven into the ground, from which to the framework of the house are stretched horizontal rows of string. As the house faces direct south, the Tomatoes planted at this distance and trained up the strings ripen splendidly. It is found best to grow a number of varieties; Conqueror, Hackwood Park, Prolific, and Alpha are very valuable, but for shape, flavour, and fertility Livingstone's Prolific bears away the palm. In America this variety, notwithstanding the great number of seedlings, is as largely grown as any, and for field culture it has hardly a rival.

SEAKALE, as one would expect from the name, is also grown under the most favourable conditions. The rows are from 4 feet 6 inches to 5 feet apart. At the proper season the old leaves are taken off and the plants covered with 9 inches or 12 inches of earth. Above the ridges is then spread seaweed from the beach. With this simple treatment fine Kale can be cut and marketed in the month of February. But for any great profit to accrue, the winter on the mainland must be severe.

THE FINEST ASPARAGUS I saw was at Mr. Trevillach's, of St. Mary. The Grass was as tall and vigorous as that at Argenteuil; in fact more bushy-growing Asparagus would be almost impossible. The soil is quite 6 feet deep, and the borders are protected on all sides by Escallonia or Euonymus hedges. This grower seems to know of no special treatment, except that he hardens the ground as much as possible, and has applied no dressing for the last three years. The result therefore is the natural outcome of the great depth of fertile soil; the dry state of the atmosphere is also, some think, a coadjutor.

THE CUT-FLOWER TRADE is also increasing, and annually large quantities of Narcissi and Arum Lily blooms are despatched to the markets of London and other large towns. The Arum (*Calla æthiopica*) appears to grow wild in Mr. Trevillach's garden; the number of bulbs may be counted by myriads. In this garden, beneath the inevitable sheltering hedge, are growing vigorously *Maréchal Niel* Roses and *Hydrangea paniculata*, and in a wild tropical part of it is a plant of *Boule de Neige* Abutilon trained as an espalier, and covering 10 feet of wooden trellis. Except from the wind this remarkable plant has never had the slightest protection. *Nerines* and *Belladonna Lilies* are equally prosperous.

APPLES are an abundant crop on the islands, and Pears will also succeed well if protected from the wind. This protection from the wind is a *sine qua non*; only those who have experienced it can describe the force of a western gale which has traversed without interruption, gaining strength the while, the full breadth of the Atlantic. Until recently horticulture has been in a backward state, but now that pecuniary profit is to be obtained, the ground is being developed to its utmost limit. The want of money is as much the root of all evil in gardening as in every thing else. C. A. M. CARMICHAEL.

Martin's President Cauliflower.—After giving this sort a good trial, I am now enabled to give my opinion respecting its merits. Among

the varieties I am growing are Best of All, Snowball, Early Erfurt, Veitch's Giant, Walcheren, and the one in question. On September 2 I wanted a dish of Cauliflowers for a collection of vegetables. I have a large quarter of Cauliflowers planted, and I carefully searched for the best; this I found in Martin's President, which, to take into consideration the dry weather, was certainly an admirable production, being close and well protected by the foliage and perfectly white; in fact, I look upon this Cauliflower in such seasons as that we have just gone through as a gardener's friend. R. GILBERT, *Burghley.*

INDOOR GARDEN.

DRACÆNAS AND THEIR CULTURE.

FEW ornamental foliaged plants have attained such universal and lasting popularity as *Dracenas*. Their graceful growth and, in some instances, hardy, robust nature fit them admirably for dinner-table and other decorative purposes, as well as for window culture. The green-leaved kinds, congesta and rubra, are especially adapted for this latter purpose, resisting well the adverse influences to which plants are necessarily exposed in such positions. They are very largely grown by the Paris market gardeners, and are finding greater favour than formerly in this country. They are also suitable for planting out in cool winter gardens, the first named kind attaining a height of some 8 feet, the latter not growing so tall. The greatest favourites are undoubtedly terminalis, Cooperi, and ferrea, the first named being too well known to need description, the two others being almost equally so, the one having graceful arching foliage strongly marked with red, the other bearing sombre tinted leaves, which render it valuable for purposes of contrast. The kind most in favour on the Continent, however, is *terminalis stricta*, which has broader and more upright leaves than terminalis, and has a richer and more substantial appearance. It is largely grown by the Paris market growers, but even more extensively in Berlin, from whence large quantities are exported to other parts of the Continent, and even to Paris, nurserymen there having told me that they could better afford to pay transport all the way from Berlin than to grow the plants at home. The Berlin *Dracenas* are remarkable for their sturdy appearance and large size of plant in comparison with the pots. Another kind much in favour is *cannæfolia*, having broad, rather long green leaves, which, gracefully arching, render it very effective. *Fragrans* is also grown, but to a limited extent. It is a neat-habited green-leaved kind, the foliage being closely set on the stem. For general decorative purposes the above named, although long in culture, are not excelled by any of the newer varieties. They grow freely, are not difficult to propagate, and when grown well in 4½-inch pots are just the right size for the many purposes for which plants in small pots are needed. For the adornment of warm houses and the embellishment of groups, some of the large growing kinds are, of course, more suitable. Good sized specimens of such kinds as *grandis*, *Baptisti*, *Bausei*, *Guilfoylei*, *imperialis* *regina* are amongst the most effective of fine-leaved plants, but they certainly require to come to fairly large dimensions before they can be properly appreciated.

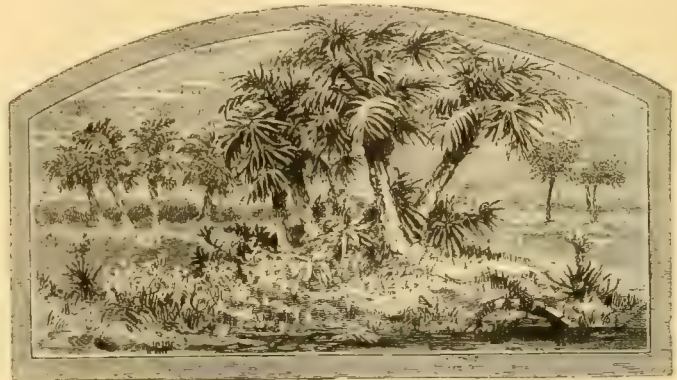
PROPAGATION.—There are altogether four ways of increasing *Dracenas*; the most popular, because in addition, perhaps, to its being the easiest, it does not involve the disfigurement of the plants, is from the tap root, which, forming, as it were, a continuation of the stem, thrusts itself Carrot-like deep into the soil, flattening itself in time against the drainage of the pot. The common practice is to cut away these tap roots when the plants are shifted, cutting them up into pieces about an inch long, and laying them in Cocoa fibre or white sand in a brisk bottom-heat until rooted. If not allowed to dry before insertion they quickly form roots, and in the course of some six weeks young growths appear. When

these are about 3 inches long each plant should be potted in the smallest sized pots. Another way, but one which in a certain sense entails the destruction of the plant, consists in cutting up the stem into pieces containing one joint each. If a large stock is required, each piece is split down, making just double the quantity, but this entails some risk, and is only to be attempted by a practised propagator. These bits of stem are inserted upright if left entire, just burying them, and when divided laid cut portion downwards, just covering them with sand. As a rule they take longer than root cuttings to make growths, but they form equally good plants. A method much pursued by some of the French growers is laying the plants down on a hotbed, just covering the stems with light material; this induces the formation of side shoots nearly all the way up the stem, which are taken off as they are large enough with a little bit of heel to them. Yet another way, which is to take off the head of foliage with about 3 inches of stem and insert that as a cutting; if placed in a brisk bottom-heat it is almost sure to root, and then take off the young growths which form at the top of the stem. When a plant is cut down in this way it must of course be kept rather dry at the root, and a good plan is to suspend a bell-glass so that it covers the top of the stem. Those who have tall leggy specimens may treat them in this way; indeed, in the case of large plants it is almost indispensable to cut them down now and then, and it is the only way to obtain many branched plants. A plant of *terminalis* which has been cut down, and which has made some half a dozen good growths, has a very showy appearance, and is an excellent subject for the embellishment of large conservatories or for exhibiting in a group of fine foliage plants.

POTTING AND GENERAL TREATMENT.—Over-potting should be carefully guarded against in the case of *Dracenas*. Like Palms, they will last some time in good condition in the same pots if well attended to in the matter of water, of which when root-bound and in hot weather they require large supplies, and especially if they get from time to time some manurial stimulant. Young plants do best in rather fine peat with abundance of coarse silver sand in it, and they may be grown continually in peat if good, but many growers prefer good loam for the plain-leaved kinds and a mixture of the two soils for the variegated ones. In all cases good drainage must be given, and sufficient white sand should be used to prevent the soil becoming close and sour before the roots obtain possession of it. A compost that I have used, and which is the favourite one with many Paris market growers, is the turnings out of hotbeds, which have been turned over many times in the course of two or three years, and which have become rotted down so as to be indistinguishable from mould. In this roots are even more freely made than in peat, and no sand is needful, as it never becomes close, but of course a little may be beneficially added. I have seen some wonderful examples of *terminalis stricta*, *ferrea*, and *Cooperi* grown in this soil—plants 5 feet high, in 8-inch pots, with foliage to the rims; but it is not given to everyone to grow *Dracenas* to such perfection. Those were the production of the Messrs. Chantrier, of Mortefontaine, the well-known raisers of *Crotons* and *Dracenas*. If propagation is done from November to March, the first named month being a good time for cutting up old leggy plants, the young plants will grow into nice little specimens, well established in 2½-inch pots, by the close of the summer, so that if shifted into 4½-inch pots the following March, they will that year grow into fine decorative material. The atmospheric conditions are easily managed; plenty of moisture in the air there must be, or the foliage does not develop freely, and an arid atmosphere engenders thrips and red spider. M. Truffaut, of Versailles, finds that they do best on fermenting material, which gives just the right conditions, whilst with hot water the balance is not so easily maintained, and M. Truffaut is one of the best growers of this family of plants in France. But whoever has a fair idea of the

requirements of warm house plants generally will experience no trouble much in *Dracena* culture, only that they require more light than most things grown in heat, or they do not colour well. There used to be a grower at Barnes who did them remarkably well, the younger leaves being almost scarlet, and it was said that he possessed some secret mixture of soil, but an old experienced cultivator told me that he never shaded them, and therein laid the secret. But his houses or frames were probably of the old heavily-timbered, small-paned kind, and it is probable that by not shading just the right amount of light was obtained. In houses of modern build fronting south I am sure they could not be well grown without shade in such weather as we have lately had. Still the fact, if true, of their having been thus grown points a moral, *i.e.*, that the less shade compatible with the maintenance of the correct conditions in other respects, the more likely are the plants to colour well and thrive generally. During spring and early summer the temperature should not be less than 60° by night with from 10° to 20° rise by day, according to the weather. In the height of summer in fine weather no fire-heat will be needed, but on the approach of the dull autumn days they must get from 50° to 55°, in which temperature they will pass the winter safely.

will get nice little plants in 2-inch pots by April; then if you make up a bed of soil on fermenting material and plant out 8 inches apart, you will see such growth made as the best pot culture cannot effect in the time, and in about twelve months you will have some nice plants large enough for some decorative purposes, but this is rather quicker work than many could satisfactorily accomplish, and only the best of skill and appliances will grow a *Dracena* in one year to decorative size. If the young plants are obtained anywhere during the winter or spring and grown along that year in an ordinary way, they will be large enough the following spring to ensure their making full sized specimens that season. If I had a quantity of these plants to grow I should prefer span-roofed frames to all other forms of glass structure, but in those of the ordinary description or in a house they will do very well. In Leipzig many thousands are grown in this way, and it is a very interesting sight to see frame after frame full of fine plants as if cast in a mould, so similar in development are they. If potted up in October and placed in gentle warmth they quickly take root, and do not in any way suffer, but I should add that neither *congesta* nor *rubra* do well in this way, although both *cannæfolia* and *indivisa* and the coloured kinds do. J. C.



Group of Palmettos.

I am here referring more especially to the variegated forms. The green-leaved ones generally require to be grown quite cool from June onwards, and only demand greenhouse temperature in winter. The only need of heat in their case is to push them along in their youth so as to economise time. When they come into 4½-inch pots they ought to be grown quite cool. This is especially the case with *indivisa*, which I before omitted to mention, but which from its extreme robustness and contrast to all other kinds is very desirable. This kind is impatient of heat and soon draws up and loses its healthy appearance when kept in warmth. Plants which have attained a good size are best in the open air through the summer; plunged to the rim of the pot in the Grass, they look very well, and enjoy the sunshine and breeze and rain much better than under glass accommodation. For corridors and similar places this is a grand plant. One cultural detail in connection with these plants I would emphasise, and that is the regular syringing of the foliage in hot weather. Not only is the surface to be dewed over, but the water must be got well to the undersides of the leaves, for it is there where enemies congregate, and they cannot endure the frequent bath of clear cold water.

PLANTING OUT.—Time and labour saved and luxuriance gained are the results of setting the plants in prepared soil to make their growth. Now if you can do your propagation in November, you

THE PALMETTOS.

THE genus *Sabal* is composed of about half a dozen species, all of which are natives of the New World. *S. umbraculifera* is the most stately of them, as may be seen at Kew, where, towering up to the top of the Palm house, is a noble specimen of this species, the large fan-shaped leaves and clusters of Grape-like fruit of which make it an object of universal admiration. Seeman in his "Popular History of Palms" quotes a statement made by the ex-curator of the Royal Gardens, Mr. John Smith, which is to the effect that nothing definite was known as to the native country of this species, and South Africa was suggested as its probable home. Recently, however, it has been satisfactorily proved that *S. umbraculifera* was originally a native of the island of Bermuda, and the name has therefore been altered to *S. Blackburniana*. *S. Palmetto* is interesting because of its being the most northern species of all Palms. In Carolina and Florida it occurs plentifully, and our small woodcut presents a glimpse of a cluster of it in the latter State. *S. Palmetto* forms a stem about 12 feet in height, which bears on its apex a crown of large fan-shaped leaves. In America the stem of the *Palmetto* is largely used for wharf building, and its leaves are made into light summer hats, the well-known *Palmetto* hats so largely worn in almost all parts of the world; its roots also are used for tanning purposes. Horticulturally, the *Sabals* are of little service as

ornamental plants, unless sufficient room can be afforded them to grow into large specimens, such as are to be seen at Kew and in other gardens where large Palm houses exist. B.

ARISTOLOCHIA GIGAS.

WE have on more than one occasion received flowers of the Bird's-beak Birthwort (*A. ornithocephala*) under the above name, and we learn on good authority that the substitution of the one for the other, possibly from a belief that the two names belong to the same plant, is not unfrequently practised by nurserymen. It will be seen from the following that there is a very marked difference between the two plants to which the above names severally belong. *A. gigas* was so named by Lindley (*Botanical Register*, 1842, t. 60) who says of it, "Well might this flower excite the astonishment of those who saw it exhibited, for certainly it is a rare event even in the Tropics to meet with so strange a production. If we were given to fancies we should speculate upon the possibility of its being a cross between an elephant and an Arum, for the colour and smell belong to the latter, and the ear of the former turned inside out is no bad imitation of its form." Six years later two quarto plates were devoted to the same plant in the *Botanical Magazine* (t. 4368-9), and the name of *A. grandiflora* is there pointed out to be the correct one. The flowers of this plant are formed of a long doubly bent tube, which is inflated like a bladder near the mouth, and then spreads out to a broad uneven-sided cup which is so large as to cover a man's head. A tail about 6 inches in length terminates the highest point of this gigantic cup. The whole inner surface of the flower is radiated and reticulated with veins deep blood-purple in the centre and within the mouth; the rest is dirty white mottled with blood-purple about the veins. When not in flower this species may be recognised by the pubescence of its leaves, and by their being distinctly acuminate. Until the discovery of the giant of the genus and the largest flower known—if we except the *Rafflesia*—i.e., *A. Goldiana*, the above species was the Goliath *Aristolochia*.

A. GIGANTEA is another large-flowered Birthwort with the general appearance of *A. grandiflora*, differing, however, in having smooth, kidney-shaped leaves and a shorter tail to the blade of the flower; it also differs in colour from that species.

A. ORNITHOCEPHALA, or, as it is sometimes called, *A. brasiliensis*, is a frequent inmate of our stoves, and in the strange form and large size of its flowers is quite as remarkable as any of those above mentioned. From *A. gigas*, however, it differs very widely, its smooth glaucous, kidney-shaped leaves and the division of its flower limb into two blades or lips being characters by which it is easily recognised. The beak-like upper lip, which is 6 inches long, has suggested its name, whilst the lower portion of the flower is a broad-spreading, reniform blade, which hangs downwards from the end of a narrow stalk-like and horizontal portion.

The above three species, viz., *A. grandiflora*, *A. Goldiana*, and *A. ornithocephala*, are strong, free-growing stove plants, very easy of cultivation, and if their unpleasant smell is not too strong to admit of their being grown, they are certainly sufficiently wonderful to deserve favour. In large houses their disagreeable odour is not very perceptible, unless one places his nose in the near neighbourhood of the flower-tube; but for small houses we should like to know how sensitive the olfactory nerves of their frequenters were before we recommended either of the above plants for a place in their collection. One of our correspondents wrote of *A. ornithocephala* that "it had been immensely admired, and is certainly very decorative in a hot-house, though the perfume is not sweet."

Golden Creeping Jenny.—For covering old walls, furnishing bare unsightly banks or slopes, or for hanging baskets, few trailing plants surpass this old-fashioned favourite. Over most

plants used for this purpose the Creeping Jenny has two very considerable advantages, viz., that of being quite hardy and suiting itself to almost any position or condition, and also that of serving the same purpose winter and summer alike without requiring renewal or getting unsightly. The whole plant is bright golden yellow, and the stems, which are long and pliable, hang in graceful profusion over the pot or basket in which it may be placed. Many of the window boxes which one sees in a walk through London are filled with this and the common green-leaved Creeping Jenny, and well they look, even in places in which they could hardly be expected to thrive.—K.

WORK DONE IN WEEK ENDING SEPT. 17.

SEPTEMBER 11.—Preparing soil to top-dress early vinery border; the best loam we can get, a small proportion of charcoal and crushed bones—half-inch—and chalk are the whole of the ingredients used. The border being now of full size extension is impossible, but as we like to give the tips of the roots a bit of entirely fresh soil most years, a trench 2 feet wide will be dug out at the extremity of the border with all the care possible to avoid injury to the roots; the latter will be shortened with a sharp knife and be laid in the new compost, well pounding it down as each layer is put on. This done, the entire surface will be dressed with the like compost, the old loose surface soil being previously scraped off and cracks in the border filled up with fine soil. The border being entirely outside, the whole will then be covered with long litter and leaves—not in sufficient thickness to heat—but only just enough to prevent the ingress of cold. Digging up late Potatoes—our two best varieties are *Magnum Bonum* and *Reading Hero*. We have now quite discarded *Paterson's Victoria*, which used to be our staple late variety, in favour of these two kinds, the latter being quite equal in quality and, as a rule, quite free from disease when the *Victorias* have been badly affected. *Magnum Bonum* is the most profitable Potato in cultivation, and is of first-rate quality from Christmas onwards, and should not be used earlier than that. *Reading Hero* is now usable. We store them in a dark, dry shed, lay them on, and cover them over with clean straw, and on wet days turn them over to remove bad tubers. Odd jobs of sweeping up, washing pit-lights, and preparing the pits for bedding plants, *Violas*, &c., completed to-day's work.

SEPTEMBER 12.—Summer returned in all its fulness to-day—82° in the shade—a fine time for gathering the earliest Apples, which we did. Wasps have done serious injury, far more than birds this season, and all that were any way injured have been put together for present use. The others are laid on the fruit room shelves as thin as space will admit of, and for the present the ventilators will be left open night and day, netting having been put over the ventilators to keep out wasps. *Beurré d'Amanlis*, *Beurré de Capiaumont*, *Louise Bonne de Jersey*, and *Flemish Beauty* Pears were also gathered; unfortunately this did not take long, as they are scarcer than ever they have been before. Pears we always lay in single file on the fruit room shelves, handling them gently as we would Grapes, for the slightest bruise quickly engenders decay. Sweeping up is now becoming a daily requirement, and as we value neatness about as highly as good cultivation, we cannot neglect it, however pressing other duties are, and happily just now they are not of that nature. Hoeing amongst crops of August-sown Onions, winter Spinach, and Broccoli; watering late Peach trees on walls that are bearing heavy crops; gathering the fruit and tacking up Tomatoes to the walls; pulling up old Pea baulm and clearing away the sticks, were our other doings to-day.

SEPTEMBER 13.—Saturday, I suppose, is a busy day in every garden. It is always so here, and in all weathers too; for if wet, the glass department comes in for an extra share of cleaning and rearrangement of plants, and if fine, there is always more to be done in both departments than can be

well got through by 5 p.m., the hour we conscientiously strive to set all hands at liberty. Flower garden occupied a large portion of our time, the formal beds having the usual picking over to keep the various plants in their rightful place. The hot summer has taught us valuable lessons, which will help us to vary the arrangements of next year considerably, and particularly in the direction of using taller growing plants in set or formal patterns. All Sedums and similar plants, in spite of heat and abundant waterings, have maintained their normal character of flat growth, but *Alternantheras*, *Mesembryanthemums*, and some few other plants of the same habit of growth have grown about twice as tall as they do generally, and it being deemed inadvisable to pinch them back in order to maintain the usual even or level appearance of beds of this nature, they now present a most effective undulated appearance, that had we aimed at producing we could hardly have hoped for the success that has resulted from chance, or rather, from the hot weather. Hence another year we shall strive for the undulations by the use of taller plants in conjunction with dwarf types. Flowering plants could not possibly be more gay than they now are; the rain of last week made them look bad for a day or two, but all bad flowers having been picked off to-day the beds are now clean and gay. *Violas* and *Lobelias* have also renewed their vigour, seed-pods being constantly kept off them. *Viola Mrs. Gray* (white), pink *Pelargonium*, and *Agathæa celestis* (blue *Marguerite*), planted in mixture is a bed to admire once, and be kept before the mind's eye for months. Tall plants had a tie to their supports, and seed-pods were picked off *Dahlia*s. *Herniaria glabra*, which is used as an edging plant to all the beds, was also clipped over, and this will be the last time it will require to be cut this season. This is by far the best green hardy plant suited for edgings of beds or for groundwork for succulent plants, and the next best are *Sedum glaucum* (grey) and *Lythrum* (green); this last named gets very rusty in dry weather, otherwise it is one of the best for carpeting purposes, either in that type of bed or for covering the ground beneath tall herbaceous plants. Watering inside Vine borders, weeding Pine beds, and surface-dressing them with Cocoa fibre solely for neatness sake, and watering the plants were our only other jobs worthy of note.

SEPTEMBER 15.—Mowing has again become a daily duty, and as we like to keep pace with the machine, all hands have to take to the scythe each morning till breakfast time; then there is the sweeping up, cutting of edgings round shrubbery clumps, walks, and beds near which the mowing has been done, so that we can rarely get at what I term real profitable work till eleven o'clock. But there the ornamental is profitable in gardening, because of the pleasure derivable from high keep of any department; still we prefer to be at Apple gathering, which to-day took up most of our time. In the houses more propagating was done, and soil prepared for the pits in which *Violets* are to be grown throughout the winter, also for *Calceolarias*, *Violas*, and *Echeverias*. The early *Hamburg Vines* were partially pruned, the final cutting back to be done as soon as the still green large leaves indicate full maturity of the wood by turning yellow.

SEPTEMBER 16.—A heavy rain storm (nearly half an inch) early this morning upset our plans for the day, but the jobs that have been done needed attention just as much as did *Nut* and *Apple* gathering, which were our intended duties. All walks have been rolled, lawn-tennis grounds too, and also re-marked—Cocoa fibre is our marking material; it is neater, and does not need renewal so frequently as whitening. Weeding amongst *Brussels Sprouts* and taking off yellow and useless leaves, and the same from curled and cottagers' *Kales*, thinning out *Turnips*, also *Lettuce*, and transplanting some between rows of recently planted *Strawberries*, and sowing *Cauliflower* on a south border to stand the winter, have been our kitchen garden doings. Indoor hands have been engaged taking off runners from pot *Strawberry* plants,

disbudding and tying Chrysanthemums, weeding and re-surfacing with good soil pot Roses, and watering Peach borders, the wall trees, as well as the borders in houses, for the rainfall has not been nearly sufficient for any description of wall fruits, so that where water is plentiful such work will be well repaid by abundant fruit next year. Of course everybody's soil is not so open and light as the writer's, and tenacious soils may not require the same amount of artificial watering, still it is better to err in giving too much rather than that the wood should shrivel through lack of it. I do not believe in withholding water to ripen the wood of any description of fruit trees; such a notion is a delusion and a snare, notwithstanding its general credence.

SEPTEMBER 17.—More Apple gathering, also Nuts (Cobs and Filberts); these are large crops, and must be gathered forthwith, as the squirrels are taking them wholesale. Planted out more biennials in mixed borders, weeded amongst the plants, cut away the bad flowers, tied up tall biennial Sunflowers, Asters (Michaelmas Daisies), and late flowering Phloxes, and made note as to plants to be divided and re-arranged as soon as it is safe to do such work. *Lilium auratum* and *Gladiolus* have made a grand show in the borders for a long time past, and have won their way to increased favour as plants for mixed gardening, and will, therefore, in future be grown in greater numbers. Sub-tropicals are at their very best, and to keep them perfect are being examined as to their safety in windy weather, which may shortly be expected. All the edgings are gone over once a week, and straggling parts of plants cut away. Two of the best flowering plants that associate well with sub-tropical plants are now in great beauty; they are *Bocconia cordata* and *Acanthus lusitanicus*; both are quite hardy, and look most at home when planted on turf. Early Peach borders inside are being top-dressed, and a couple of trees that were planted last year having grown far too strong are being lifted and replanted in the same positions; by transplanting thus early we expect to get a crop of fruit from the trees next season. Our staple soil is loam, chalk, wood ashes, to which a small proportion of bones is added, and the whole well pounded together. Peaches enjoy a hard border quite as much as do Strawberries.

HANTS.

RECENT PLANT PORTRAITS.

BILBERGIA SANDERIANA (*Belgique Horticole* for January).—A fine double plate of a rather showy Bromeliad introduced by Messrs. Sander, of St. Albans, in 1882 from Rio de Janeiro, where it was first discovered by M. Glazion in 1868. It produces its flowers, which are greenish tubes tipped with blue, on long pendulous racemes, with pale pink bracts to each lateral branchlet.

MASDEVALLIA BELIA (*Belgique Horticole* for February).—A curious variety of this very numerous family of terrestrial Orchids from New Grenada, with large brown flowers with white centres. Introduced by Messrs. Low, of Clapton.

DIANTHUS LIGNOSUS PRESIDENT AMIRAL GREIG (*Revue de l'Horticulture Belge* for September).—A very handsome and apparently vigorous growing and stout-constituted Carnation, resembling in habit of growth the well-known variety *Souvenir de la Malmaison*, but with large and fully double deep rose-coloured flowers, heavily streaked with carmine. Raised by M. J. Puls, of Courtrai, near Ghent, and named after the president of the Horticultural Society of St. Petersburg. This should be grown by every lover of fine Pinks.

DIANTHUS CARYOPHYLLUS (*Illustration Horticole*, plate 529).—A fine double plate, showing half-a-dozen handsome varieties of double Carnations belonging to the section of the family known as *bizarres*, and raised from seed by M. E. Morren, of Jette St. Pierre, near Brussels. The blooms are of very fine size and of rich and varied shades of colour. They are not named, but lettered to distinguish them from one another.

CYPRIPEDIUM CILIOLARE (*Illustration Horticole*, plate 530).—An exceedingly handsome variety of Lady's Slipper, well worth adding to any choice collection of these plants, and somewhat resembling the variety known as *C. superbiens* (Rchb.) or *C. Veitchianum* (Hort.). Bloomed first by M. Lemoine, of Lille.

GUNNERA MANICATA (*Illustration Horticole*, plate 531).—This exceedingly handsome foliage plant appears to be almost, if not quite, hardy in this country, though the country whence it comes (Brazil) would hardly lead one to hope that it should prove to be so. It is evidently a moisture-loving plant, and planted on the banks of a pond in the north of Ireland, where its roots could reach the water, its foliage attained the splendid dimensions of over 7 feet across, forming a truly splendid specimen. It is in every way superior and much to be preferred to the more generally known *G. scabra*, and should be included in all choice collections of ornamental foliage plants.

W. E. G.

NOTES ON ORCHIDS.

Cattleya Rothschildiana.—A flower of this Orchid has been sent to us by Mr. White from Mr. Dorman's collection at The Firs, Sydenham. It reminds one of *Cattleya maxima*, also in flower at the present time, but the flower is somewhat different in shape, and the colour is more delicate than in that variety. Any Orchid that flowers at this season is valuable, especially such a lovely *Cattleya* as this is. With this *Cattleya* is sent a flower-spike of the new *Catasetum Christyanum*, a singularly shaped Orchid of a dull purplish hue. It is nevertheless distinct and interesting for a collection.

Habenaria ciliaris.—I should like to know if Mr. Rawson has succeeded in flowering this lovely little Orchid for more than two seasons, and if so, would he give a note regarding its treatment. I have repeatedly tried not only this, but various others—indeed I might say all of the North American *Habenarias*—but without success, though with European Orchids I am fairly successful. The above species, *H. fimbriata*, *H. psycodes*, and *H. lacera* all gradually decline after the first year, our seasons being evidently too cold to ripen the tubers.—A. D. WEBSTER.

Dendrobium bigibbum var.—What appears to be a distinct variety of *D. bigibbum* may now be seen in flower at Kew. Instead of the yellow blotch on the labellum as in the type, the Kew plant has a blotch of deep maroon, whilst the rest of the lip is purplish. The sepals of the variety are whitish with deep rose veins, and the petals are purplish pink. *D. bigibbum* is a native of the north-east coast of Australia, hence the high temperature required for its successful cultivation. The variety now flowering at Kew is additionally interesting because of its having been collected in the island of Timor, which is situated about half way between Australia and Borneo.—B.

Phaius bicolor.—The Kew specimen of this plant commenced to flower in May, and since that time until the present it has continued in flower without intermission, so that from the opening of the first flower to the fading of the last a period of about four months has elapsed. *P. grandifolius* and *P. Wallichii* do not last in flower one-fourth of this period, nor does the pretty and rare *P. tuberculatus* last any longer than these. It will be seen from this that in addition to the distinct beauty of the flowers of *P. bicolor* there is the excellent quality of remaining a long time in flower to recommend it. As noted some time ago, *P. bicolor* is a native of Ceylon, and has been introduced and exhibited under the name of *P. luridus*.—Q.

Manure water for Orchids.—Referring to "Veronica's" remarks on this subject in THE GARDEN (p. 227) in regard to Mr. B. S. Williams' cultural description and requirements of *Cypripedium insigne*, I may state that if "Veronica" will think for a moment and examine the roots of

a *Cypripedium* and a *Cattleya* or *Vanda*, he will see that they are of quite a different appearance. The former, in addition to being "fleshy," is almost furry, whereas neither those of *Cattleya* nor *Vanda* are furry in comparison to a root of a *Cypripedium*. Those who regularly take in the "Orchid Album" will find the treatment of *Vanda* described under the plate of *V. tricolor* (77); but as to *Vandas* and manure water, I may state that I know *Vandas* do benefit by manure in moderation in the shape of ammonia powdered and sprinkled about the stages at intervals. Now that the subject has been started, I hope that Mr. Williams and others will describe their experience in THE GARDEN. The heavy foliage of tropical forests decomposing on the ground produces ammonia in gas, which rises, and consequently plants on the trees must be subjected to it.—DE B. CRAWSHAY, *Rosefield, Sevenoaks*.

WALL GARDENING.

STONE being plentiful, rough wall fences and dykes abound in this part of Somersetshire. In course of time Nature clothes and adorns these old crumbling walls with living plants in a great variety of charming ways. They are stained and covered with Lichens and Mosses; in shaded parts may be found whole colonies of Hart's-tongue and common Polypody Ferns, and on more exposed places the Maiden-hair, Rue-leaved, and scaly Spleenworts grow in great abundance, thickly studding every chink and crevice between the stones. Here and there the common Ivy, with which many adjoining woods are carpeted, takes possession, breaking out into tree form on the summit of high walls, and forming thereon a pleasant bright green canopy, soon to be bursting into flower. Native Stonecrops and the wall Toadflax (*Linaria Cymbalaria*) drape many parts, while in the vicinity of dwellings there are great clustering masses of Houseleeks, Wallflowers, Valerians, the rock Cresses, and purple Aubrietias, all very beautiful in their seasons.

A crumbling old cottage garden wall I know is quite covered with *Cerastium tomentosum*, with Wallflowers growing through it on the crest; another higher wall enclosing a farmhouse garden is hidden on both sides for yards with the common Houseleek (*Sempervivum tectorum*), a crowded mass, several inches deep, growing and feeding on the decaying remains of past generations; they must have been growing there many years. Amongst the rustic rockwork at each side of a low stone bridge over a rivulet grows the Cheddar Pink (*Dianthus cæsius*), pretty pendent cushions of blue green leaves, and cord-like stems nearly reaching to the water, and in flood times bobbing on its surface, prettier still in bloom with its wealth of tiny, fair, and fragrant flowers. Examples like these might be multiplied, but only one more I should like to mention. On a wide ledge a few feet from the top of a high retaining wall many plants have found a lodgment; upwards grow Wallflowers and red Valerian, while long hanging tufts of Aubrietias and Arabis drape the face, with wild Strawberries and Crane's-bills.

Now, meeting almost daily with such pretty effects so simply produced, the thought occurs, why not construct some portions of pleasure ground walls with a special view to embellishing their surfaces with rock and alpine plants? Many beautiful things would flourish and show to full advantage in such a position, and it would be an interestingly pretty way of varying the ornamentation of walls facing that part of gardens.

A rugged, inclined wall built wide at the base, the surface of which would gently recede from foot to top so that rain would reach every part, appears to me to afford just the position where many lovely things would find a congenial home. Boundary or division walls are in most gardens a necessity, especially in those of limited extent; and portions of these with a northerly aspect, preferably a curved portion, would be best suited to this purpose, building in the stones in such a way as to leave the face of the

wall covered with roughly projecting stones, lessening the projections as it heightened, and taking care as the building proceeded to make plenty of pockets, holes, and crannies to receive suitable soil for the plants to grow in, though numbers of wall plants appear to require very little soil when sown in crevices. Another way, and one taking perhaps less material, might be to form a series of rough ledges, making each narrower towards the top. The expense of construction or the quantity of material wanted for a wall like this would very little exceed that of an ordinary perpendicular one, because the extra thickness of base necessary to give the requisite slope to its surface would so increase its stability, that half the width or less at the top would suffice.

Suppose a wall 8 feet high, a thickness at the foot of 3 feet or $3\frac{1}{2}$ feet, gradually receding towards the top and terminating in the length of a brick 9 inches, or even 6 inches, would give a nice gentle inclination to its face. Weather-worn surface or land stones are the most attractive for this kind of work, but these are not plentiful in many parts; any roughly broken stone would answer, and where stone of any kind is hard to get, any rustic-looking imperishable matter, such as burrs, vitrified bricks or clinkers, built in as described and afterwards pounced or splashed all over with liquid cement, would answer quite well.

I think many pretty mural gardens could be made in the way I have described; their beauty would continually increase with the development of age; hardy Sedums and Sempervivums would soon crest the top of such walls; scores of lovely things sown or planted in the places provided for them would soon render them very attractive; the best of our native wall plants could be used; patches of miniature Ivies would be pretty, so would Ferns and Mosses. A few of the best known plants adapted for wall gardening are Aubrietias, Antennarias, the dwarf Hairbells, Cerastiums, rock Pinks, mossy Saxifrages, Linarias, dwarf Armeria, rock Roses, Sibthorpia europæa, Arabises, Erinus, and there are many rock and alpine plants suitable.

My knowledge of these (and their lime likes and dislikes) is not extensive or accurate enough to warrant the compilation of a list, but THE GARDEN possesses many contributors who thoroughly know and understand these lovely plants, and who could tell us with authority of a host of them suitable for this rugged wall garden. There are quite enough good things to avoid repetition, plenty of variety, and good large clumps or patches of each would yield the greatest interest and beauty. In kitchen gardens there are often little nooks and bits of wall space, of little value for fruit trees, frequently quite unused for anything. Such odd corners would be much improved if converted into miniature mural gardens.

Cranmere.

ARTHUR MOORE.

FISH AS MANURE.

My own experience completely confirms the statements of "W. I. M." (page 238) that fish is the best of manures. Fish manure as usually understood is decomposed fish, and in such a condition is so offensive, that it cannot be used generally. Admitting the fact that fish stands in the front rank as a fertiliser, it has only to be brought into a suitable condition to be available for everyone. It is a fact not generally known that there is a fish guano imported from Norway which is as perfect in condition as it is fruitful of good results. In the Loffoden Islands, where there are extensive works for treating the superfluous fish and waste from the great cod and herring fisheries, the fish is deprived of nearly the whole of its moisture; it is then ground to a fine powder, which certainly has for such an article the minimum of smell, and it can be kept in a dry place for any length of time without deterioration or nuisance. According to the reports of Dr. Voelcker and others, the analysis is very high as regards the ingredients most essential for fertilisation of plants, viz., nitrogen and phosphates.

The parcels that have come into my hands contain nearly 11 per cent. of ammonia and 30 per cent. of phosphates. Having a large kitchen garden and 4 acres of paddock with but little stable manure available, we have to purchase fertilisers in quantity. Every gardener knows that if he has to grow fine flowers, fruit, and vegetables, he must have plenty of good manure of some kind at his disposal. Stable manure, with its necessary litter and waste, costly manipulation, and cartage, involves a serious outlay; consequently we have been compelled to look for the best and cheapest manure offered. After many trials I find that fish guano in combination with pure potash is the one that best satisfies all my requirements; it contains ingredients all of which are necessary for really healthy plant life. Mr. G. Nevill, in his last new work on "Farm and Farming," alluding to food of plants, remarks (p. 14)—"There are certain substances which form the nourishment and are required for the support of all plants. It will, I think, be found that all require phosphorus, nitrogen, and potash, and that every one of these substances is as necessary as the other to the full development of the perfect plant." Apparently fish and potash contain them all. I have used this fertiliser successfully for nearly every kind of crop, and shall do so to a greater extent than I hitherto have done. It is excellent manure for all fruits, flowers, and shrubs. Strawberries, Vines, Raspberries, and Melons thrive well when potted or dressed with it. Celery and Cabbages grow grandly; in fact it suits all vegetables. It seems more lasting than any other manure I have used, because of the flesh and bone in it. Our Grass land and lawns were dressed with it in the spring, and we have been rewarded with green lawns all through the hot season and a heavy crop of hay from our little field. For amateurs with small gardens I must say fish and potash is a very desirable manure, economical and easy of application.

W. J. GILKS.

Higham Hill Gardens, Walthamston.

A pleasing feature at a flower show.

—This is one of the most appropriate designations that can be given to a collection of plants and flowers staged by Messrs. Sutton and Sons, the well-known seedsmen, at Reading, on the occasion of the recent exhibition of the Frimley, Yorktown, Camberley, and Sandhurst Horticultural Society at Sandhurst. The whole of the central staging, in a good-sized tent, was filled by an extremely interesting and instructive contribution from their Reading seed grounds, arranged with great effect and in excellent taste. It was a kind of show within a show. A few plants, such as dwarf blue Lobelias, the Fishbone Thistle, and striped Japanese Maize, were used in the arrangement; down the centre was a large quantity of cut spikes of fine hybrid Gladioli, and at the sides were boxes of cut flowers varied with the same in vases. It was a remarkable illustration of the pretty and attractive flowers now in bloom in the open air. There were Ten-week Stocks in variety, Phlox Drummondii in several very fine forms, the grand P. splendens grandiflora being particularly noticeable; Petunias, including some very handsome large flowered and some pretty striped varieties; Dianthus chinensis, single and double, of varying colours, and all very useful to cut from; Zinnias, the double varieties, very fine and showy; French and German Asters of various types, African and French Marigolds, Lilies of sorts, very handsome large-flowered Salpiglossis, some of the rich purple shades being particularly noticeable; Tropæolums, climbing and dwarf; Cacalia coccinea, a very bright coloured hardy annual; Tigridia grandiflora and conchiflora, large in size and singularly attractive; Jacobæas of sorts, very useful double-flowered annuals that are too much neglected in the present day; very fine seedling Pentstemons; Helianthus of sorts, the large double Sunflowers being much admired; Matricaria inodora fl.-pl. with its charming white flowers, Scabious of sorts, the rich crimson Geum coccineum fl.-pl., excellent Lark-

spurs, sweet Sultan in colours, charming blue Delphiniums, the black and gold Harpalium rigidum, the glowing Coneflower (Rudbeckia fulgida), that charming late summer-flowering plant Tritonia aurea, Hyacinthus candicans, and the chaste Gaura Lindheimeri. It is not to be wondered at that visitors lingered by this stand. Not a few of them came face to face with certain old-fashioned flowers that recalled memories of bygone days and country life.—R. D.

SOCIETIES.

DUNDEE INTERNATIONAL SHOW.

THIS exhibition, to which allusion was made at some length last week, could hardly be called international, inasmuch as the exhibits were chiefly confined to Scotland, a few from England, and one or two from Ireland. As a whole it must be characterised as a grand display of horticultural produce, though inferior to what we have seen in days gone by both at Chiswick and Regent's Park. Orchids were practically absent, a small collection only being shown by Messrs. Ireland & Thomson, and a poorly bloomed Odontoglossum grande, to which was awarded the Veitch Memorial prize. This came from Mr. Boyer, Burnbank, Haddington. The same exhibitor also received the Veitch medal and £5 for the best stove and greenhouse plant, this time an Erica retorta major, a really well-grown and well-flowered plant some 4 feet in width and about as much in height. Of tables of plants 26 feet by 8 feet, several were to the fore, but none equal to the grand arrangement in this way furnished by Miss Jekyll at one of the meetings of the Royal Horticultural Society at Burlington House last year. Those shown on this occasion were all too flat, with perhaps the exception of that exhibited by Messrs. Ireland & Thomson, and that partook more of the character of a collection of fine-leaved plants than a table arranged for effect. Of stove and greenhouse plants there were several well-grown specimens, and amongst them a charmingly flowered Eucharis amazonica, its many spikes of snowy blossoms standing well up above a mass of glossy foliage which set them off to excellent advantage. In striking contrast with this were some finely bloomed plants of the brilliant red Scarborough Lily (Vallota purpurea), still one of the best of indoor plants at this season. Of Palms there were one or two good specimens, notably a tall plant of Areca lutescens and a good example of Kentia Fosteriana. These, a well-grown Cycas, and some Tree Ferns with noble trunks and grand heads of spreading foliage, set off the plant department of the exhibition to advantage. Other Ferns, both exotic and hardy, were also shown in considerable abundance, and we likewise saw collections of succulents and alpine plants, the latter sparsely in flower. Summer-flowering Chrysanthemums, of which several were shown, were pretty enough, but they seemed to us to lack that freshness and beauty which such plants possess in the dark months. Lance-leaved Lilies, so much admired about half a century ago, were shown in about the same condition as then and in about the same varieties, and we also noticed a grand specimen of the golden-rayed Lily from Japan, fasciated examples of which have been so common this year. Fuchsias were tolerably good—one or two specimens particularly so—but others were hardly up to the mark. Coleuses, of which some good varieties were shown, seemed to ill withstand the influence of the gas, used in such abundance for illuminating the hall, and indeed its evil effects were visible in more directions than one. Of Fern cases some skilfully arranged examples were shown; and hanging baskets also deserve notice, especially that to which the first prize was awarded, which was more gracefully arranged than the others. Hydrangeas, Pelargoniums—both scarlet and variegated—Petunias, and Begonias constituted the bulk of the other plants.

The great feature of the show was the fruit, especially white Grapes, of which some grand

examples were shown. Of these the heaviest bunch was one of the Syrian variety from Sir Herbert Maxwell's garden. This weighed 18½ lbs., only a pound or so lighter than the memorable bunch of this Grape produced at Welbeck years ago by Speechley. Golden Hamburg was also shown in fine condition, and two bunches possessing a clear amber colour like a Muscat, but not named, were very perfect. Of Buckland Sweet-water we also observed good examples. Of black Grapes there were also some grand clusters, but, singular to say, in a season like this they were, with a few exceptions, indifferently coloured; even the two bunches to which the Veitch Memorial medal was awarded—two Muscat Hamburgs from Mr. Boyd, large and fine—were somewhat deficient in this respect. Of Black Alicante, some fine bunches were shown, not large, but well coloured; indeed, this is the variety of Grape that carried off the first prize for being best bloomed. Mr. Boyd showed the best two bunches of Black Hamburg. They were not remarkable as regards size, but in other respects they were very perfect. The second prize lot were larger, but not so good, being what may be termed double bunches—at least, one of them. The finest flavoured Grapes in the show were considered to be the Muscat Hamburg, certainly a grand Grape both in bunch and berry. It was found many years ago at Hurlingham House by the late Mr. Snow, and by some considered to be identical with the Black Muscat, now almost or quite lost to cultivation. Of Lady Downes and Madresfield Court there were likewise good examples, and the latter showed no trace of cracking, a fault to which this Grape is well known to be somewhat liable. Amongst other black Grapes were fine bunches of Alnwick Seedling, Mrs. Pince, and Barbarossa.

The best collection of fruit came from Mr. McDoe, Hutton Hall, Guisborough. It contained two Pine-apples, two Melons, Black Hamburg, Trebbiano, Muscat, and Gros Maroc Grapes, Humboldt and Elruge Nectarines, Violette Hative and Princess of Wales Peaches, the latter large and pale in colour, Greengage and Magnum Bonum Plums, and Brown Turkey Figs. Mr. Johnstone, Glamis Castle, who was second, had Duc de Telliers Peach, some good Nectarines, fine looking black Cherries, good Muscat, Madresfield Court, and Raisin de Calabre Grapes, small Moorpark Apricots, and good Pitmaston Orange Nectarines. Mr. Murray, Culzean, had very fine black and white Grapes, Figs, and amongst other fruits Kirke's Plum in grand condition. In collections of twelve sorts of fruit the best came from Mr. Dickson, St. Andrew's, who had Gros Colmar, Muscat, and Black Hamburg Grapes, a smooth orange-coloured Melon named Best of All, and a kind called Blenheim Orange, Williams' Bon Chrétien Pears, Apricots, Victoria Nectarines, Kirke's Plum, Barrington and Walburton Peaches, and white Ischia Figs. In collections of eight sorts the best came from Mr. Day, Galloway House, who furnished Bon Chrétien Pears, Pitmaston Orange Nectarines, Magnum Bonum Plums, Brown Turkey Figs, Princess of Wales Peach, Blenheim Orange Melon, Alicante and Muscat Grapes. Good Black Hamburg Grapes, Kirke's Plum, Cherries, and Royal George Peaches were also shown in this class by Mr. Fairgrieve, gardener to the Dowager Duchess of Athole, at Dunkeld. The best collection of fruits grown in the open air also came from Mr. Fairgrieve, who showed Shipley Apricots, Victoria Plums, Elruge Nectarines, Jargonelle Pears, Jefferson Plums, Hale's Early Peach, and Morello Cherries, all wonderfully fine fruit for the north of Scotland. Of baking Apples, the best came from Mr. John McKenzie, and consisted of Lord Suffield, Warner's King, Stone's Apple, Peasgood's Nonsuch, Dutch Codlin, and Gloria Mundi. In other collections we remarked Cox's Pomona and Worcester Pearmain, the last a handsome Apple. Some handsome Apples were exhibited from Kent, especially those from Messrs. Frost, Maidstone, and Mr. McKenzie, Linton Park, both of whom showed grand collections. Six fruit of Gloria Mundi from the latter weighed 5½ lbs.

Of Pears a good collection was exhibited by Mr. Hunter, Lambton Castle. It contained General

Tedleben, Pitmaston Duchess, Louise Bonne of Jersey, Brockworth Park, Beurré Clairgeau, and Princess of Wales, all good. Amongst other Pears we noticed good specimens of Souvenir du Congrès, Gratioli of Jersey, Durandean, and Jargonelle. The heaviest six Pears came from Mr. Hunter. They weighed 7½ lbs., and consisted of Beurré Diel. Pine-apples were in no way remarkable, but we noticed some good well coloured Peaches, consisting of Royal George and Grosse Mignonne. These came from Mr. McLeod and Mr. Johnstone. Of small fruits, such as Gooseberries and Currants, red, white, and black, we observed several good dishes, and also one of the red-fruited Elder—brighter than the brightest coral and very beautiful. Pears, Plums, and Apples were shown in pots, and there were also some well fruited pot Vines.

Of vegetables there was an extensive exhibition, and very fine some of them were, especially Parsnips, Carrots, and Potatoes, of which there was a great display of clean and handsome tubers. Of Onions there were some grand examples, large and solid, a remark which specially applies to Rousham Park Hero, an Oxfordshire variety, evidently a good selection of the white Spanish. Tomatoes, as might be expected in a season like this, were finely coloured, and amongst them none better than Criterion. Of Leeks, a vegetable much more used in Scotland than in England, there were some fine specimens, blanched from 10 inches to 15 inches in length, and thick in proportion.

For cut flowers room was found in the annexes near the entrance. Amongst them were some good Roses from Messrs. Cocker, of Aberdeen; Pansies, Hollyhocks, Gladioli in grand condition, Pentstemons, Gaillardias, Phloxes, Marigolds, and double and single Dahlias. Dinner-table decorations and bouquets of various sorts were present in considerable numbers; but though handsome as the best of white flowers and Maiden-hair Ferns skillfully associated always are, there was nothing amongst them calling for special remark.

NOTES OF THE WEEK.

Lectures on horticulture.—It is announced that at the City of London College, White Street, Moorfields, Prof. Boulger will give a series of lectures on Wednesday evenings during the winter term on the practice and principles of horticulture, and on vegetable morphology and physiology.

Grapes at the Health Exhibition.—At the Fruit and Vegetable show to be held on the 23rd and 24th inst. at South Kensington, in connection with the International Health Exhibition, the classes devoted to Grapes are very numerous, embracing as they do more than half the schedule. Valuable prizes are offered for collections, and also for special varieties, and a spirited competition is expected.

Still they come.—Another gardening paper has just been issued. The appearance of three new journals on one theme within a few months is quite without precedent in the history of class journalism. There can be no doubt that the multiplication of journals in gardening is beneficial, and we may without affectation wish well to the best of the new comers.

Forestry Exhibition awards.—We learn that so much dissatisfaction has resulted from the awards of the jurors at this exhibition, more especially in connection with the exhibits of plants, that the following nursery firms, namely, Little & Ballantyne, The Lawson Seed and Nursery Co. Limited, Ireland and Thomson, John Lamont & Son, Stuart & Mein, and others, have declined to accept the medals, &c., allotted to them.

The Dunlop House Orchids.—We learn that the entire collection of Orchids formed by the late Mr. Cunningham Graham has been left to his gardener, Mr. D. Kemp, and that the collection will be disposed of at Stevens' during the coming week. Judging by the many fine examples of Orchid flowers which we have received from time to time from Mr. Kemp, the collection must be rich in good varieties.

New species of Potato.—It will be satisfactory to know that at least one of the new species, *Solanum Fendleri* or *S. tuberosum* var. *boreale*, as described by Gray in the "Silliman's Journal," is making itself quite at home in this country. We lately saw a bed of it at Kew healthy and in full flower, but whether the tubers will attain sufficient size to be useful, or whether they will resist disease or not remains to be seen. S. Maglia, however, seems to be the species to which most attention should be directed, because sufficient

proof exists that it will resist the disease and thrive well in this country, from the fact of tubers being left in the ground and coming up of themselves the year after without the trouble of replanting. There is, however, one objection to S. Maglia, though a small one, and that is the enormous amount of stem and size of leaves which it is liable to produce in damp seasons. It crops fairly well, and produces good sized Potatoes. Another one, S. Commersoni or Ohrudi, is likely soon to play a prominent part in the Potato market when its cultivation shall have become more general, but it is as yet only in the hands of but few. It is said that it quite resists disease, and that the tubers are not harmed when the thermometer falls below the freezing point. The tubers are reported to be acid, but this to a large extent may be remedied by good cultivation. S. Jamesi is too small ever to be of much use. It may, however, be useful in the hands of the hybridist.—K.

OBITUARY.

THE death is announced of Mr. SAM MENDEL, an event which took place at Chislehurst on Wednesday. A few years ago Mr. Mendel ranked amongst the wealthiest and most prominent of Manchester merchants, and during the height of his career he was a liberal patron of horticulture, his garden at Manley Hall being at that time as richly stocked with plant treasures as any private garden in the country. After suffering reverses in fortune he retired a few years ago, when his art treasures in the way of pictures, together with his immense collection of valuable plants, were sold. Mr. Mendel's name will be perpetuated in horticulture by Cattleya Mendeli, one of the finest of all Orchids, and also by the graceful Fern, Gleichenia Mendeli.

WE have also to record the death of Mr. THOMAS D. CUNNINGHAM GRAHAM, of Dunlop House, Ayrshire, a gentleman who as a lover of Orchids and a patron of that favourite class of plants will be greatly missed. His collection at Dunlop House was a very good one indeed, and a source of great pleasure to its owner.

LATE NOTES.

Books.—W. M.—Kemp's "How to Lay Out a Garden;" Bradbury & Evans.—P. B.—Loudon's "Encyclopedia of Trees and Shrubs;" published by Warne & Co.

Cineraria leaves (J. C.).—They are attacked by the grubs of a small fly. Pick off and burn the badly infested leaves, and pinch others where you see the grubs are.—G. S. S.

John Evelyn's nomenclature.—I would suggest that Geranium triste in Evelyn's list, which puzzles Miss Jekyll, is *G. phaeum*, a doubtful British plant with dark maroon-coloured flowers.—SALMONICEPS.

Belvedere.—I observe that this plant, mentioned by Evelyn as being in flower in August, is said to be now unknown. In that case we must assume that two different plants have borne this name, for it is certain that till very recently, if not at the present moment, some London catalogues included under this designation the *Kochia scoparia*, a half shrubby plant of the *Chenopodium* family, with the habit of a miniature Cypress. Spanish Bells.—May not this have been the Spanish Squill?—W. THOMPSON, Ipswich.

In your last week's issue of THE GARDEN you credit us with receiving only a bronze medal; whereas we were awarded a silver-gilt one, the highest award at the meeting.—H. CANNELL & SONS, Swanley.

Names of plants.—K. H.—*Clematis Flammula*.—T.—*Dendrobium chrysanthum*.—U. P. D.—1, *Blechnum Spicant*; 3, *Polypodium Dryopteris*; 4, *Asplenium Trichomanes*; 5, *Lastrea dilatata*.—J. A. F. H.—1, *Pellaea hastata*; 2, *Cytidium falcatum*; 3, *Fiscalonia montevicensis*; 4, *Solidago canadensis*.—J. W. K.—Stove bulb, *Hamantulus coccineus*; *Adiantum hispidulum* (Fern); species of *Artemisia*, probably *A. Stelleriana*.—A. Eubank.—*Ipomopsis elegans*.—A. H.—*Tritonia aurata*.—M. T. W.—*Crataegus coccinea*.—J. T. (Bulton Abbey).—*Alnus incana quercifolia* (J. T. Poc.—1, *Polypodium Billardieri*; 2, *Doodia media* (syn. *D. lunulata*); 3, *Blechnum occidentale*.—G. C. (Inverary).—1, *Cystopteris fragilis*; 2, *Asplenium Trichomanes*; 3, *Polypodium vulgare*; 4, *Lastrea filix-mas*.—E. Smith.—Cannot name without seeing leaves as well; it is probably a *Helianthus*.—Capt. Dundas.—A variety of *Quercus rubra*.

Names of fruits.—G. C. (Inverary).—Plum Victoria; other next week.—H. C. Hambrook.—1, Nectarine Plum; 2, cannot name; 3, *Perdrigon*.—J. Hoogood.—Duchess of Oldenburgh.—B. J. B. and A. C. H. O.—Next week.

"This is an Art
Which does mend Nature: change it rather; but
THE ART ITSELF IS NATURE." *Shakespeare.*

STORING FRUIT.

THIS is now a daily operation in the case of those who possess large fruit gardens or good orchards. Apples and Pears, the main fruits requiring storing, should never be gathered on any account when wet. In wet seasons, in which there was hardly a dry day from week's end to week's end, we have gathered them wet and allowed them to dry in the house, but this practice is very objectionable, as it is a long time before they assume the appearance of dry gathered fruits, and the damp emitted in drying may moisten the house in which they are placed to such an extent that it will prove a source of trouble throughout the whole winter. Apples and Pears to keep well and be free from mildew must be kept dry. Select, then, dry days for fruit gathering, and make the most of such weather. No fruit should ever be gathered until it parts freely from the tree where the foot-stalk joins the wood. Take an Apple in the hand, press it very gently towards one side, and if it breaks off freely at the part just named the crop is ready for gathering. This may be taken for a guide as regards the ingathering of Pears too. Some fruits, indeed, clearly indicate by their appearance when they may be gathered, but others, especially the high-coloured ones, are often deceptive, and it is best to test them all in the way alluded to. Valuable sorts and those just almost ripe should be looked over very frequently just now, when they are ready to drop off the trees with the slightest oscillation; a windy day or night will bring them down in showers, bruising and spoiling them; they should therefore be gathered and stored before this occurs. Late kinds and perfectly unripe ones will bear a great deal of shaking about before they drop, and, relying on this, it is a mistake to gather them in an unripe state. Good fruit cannot be too carefully handled. To shake them down and then collect them is bad practice. The trees may be tall and the upper parts not easily reached, but this should never be a reason for rough handling. Ladders should be used, and there should be no throwing the fruit into baskets; on the contrary, all should be put gently into them with the hand. When a basket is full, never turn the contents out in running order, but lift each fruit out and put it down again with the utmost care. This is the only way in which to keep fruit good and perfect.

As a rule, there are various grades of fruit on one tree, especially if a large one. Some will be very fine, others middling—not being fully developed or slightly deformed. These latter should never be stored along with the best, but may be put in a corner by themselves for use when the best fruit is not desired. We have here two places for storing fruit; one is a large airy room, well lighted and fully exposed to the sun, the other, a lean-to facing the north, with no sunny aspect, and very little ventilation. So long as the latter is kept dry, Apples may be kept in it very well, although some Apples, notably the Hawthornden, are liable to become mildewed here, and none of them get so high in flavour as those in the large,

airy, well-lighted room. If the way in which fruit is stored has anything to do with the retention or bringing up of flavour—and in my opinion it has—close, dark rooms, such as we often see used for fruit stores, impair flavour, while light, airy rooms increase it. Let anyone put half a crop from a tree into a stuffy room, "good enough for holding Apples," and the other half into a light, airy one, and try both fruits at the end of a month or two, and the difference between the two will be very pronounced. Sometimes hay or straw is put under Apples and Pears on shelves, but of this I do not approve, as the fruits are liable to become tainted with a hay or straw flavour. Heaping the fruits on each other is a practice which cannot always be avoided, but it should be where possible, as the bottom fruits lose flavour; if they cannot all be arranged in single layers, which they should be, I would only make heaps of the second-rate fruits or those for use in the kitchen, and give those for dessert every possible chance to become full flavoured.

Margam, S. Wales.

J. MUIR.

NEW DESSERT APPLE.

I HAVE lately had an opportunity of testing the beautiful new early Apple, named Jacobs' Strawberry, and feel sure that it fully merits the first-class certificate granted to it by the Royal Horticultural Society at its last committee meeting at Kensington. It is beautifully striped with carmine on a yellow ground, and traces of russet on it bespeak good quality. Its best season is during August and September, and I feel certain that it will become a great favourite with market growers, for, as I have repeatedly stated, it is to early sorts of Apples that home growers must turn their attention, for the simple reason that foreign competition does not set in with any great force until the American barrels arrive, and in that case home growers have the first three months of the Apple season to themselves, because our markets cannot be glutted with Apples from the Continent in the same way that they are with fruits that require a greater amount of summer heat than this country affords. Jacobs' Strawberry is a good sized Apple, a circumstance which adds to its value, for although the majority of our best old dessert Apples are below medium size, I find that, like other fruits, the public who buy them give the preference to large kinds. It is useless alluding to flavour; in that matter tastes differ widely. Where one would select Frontignan Grapes, ninety-nine would ask for those lovely large-berried Gros Colmars, yet the latter at their best are never anything like equal to the former. When, however, we get quality and size combined with a showy exterior, as is the case with this Apple, there can be little doubt as to the position which it will occupy in the market. During the last eight years it has never failed to carry good crops, both in good and bad seasons, and therefore it has not been hastily thrust upon the public. Being soft and melting, it is quite different from the Ribston and some of the old dessert kinds. These will doubtless always find admirers, but the sorts to plant in quantity must be of a more prolific Fillbasket kind. Although exhibited and certificated under the name of Jacobs' Strawberry, I hear that it is likely to be sent out under another name—viz., that of Lady Sudeley, in compliment to the owner of the largest fruit farm in the kingdom. The Apple stands so far in advance of all other hardy fruits for general utility, that it may truly be termed the king of fruits, and any valuable addition to our lists of good kinds such as this is of national importance.—JAMES GROOM.

—So many ill-flavoured fruits are in cultivation, that we note with pleasure the receipt of a good one from Mr. Bunyard, of Maidstone. Tasted by us in mid-September, it then seemed past its best, but in flavour excellent, thus showing

a very early Apple. It was large and handsome in colour, but on these things we place no importance whatever. The aim of raisers should be to get us well-flavoured, delicate, digestible Apples. There has been a false standard held out for their attainment, and it is quite common to send out new Apples which are absolutely valueless as far as flavour goes. The name Jacobs' Strawberry is said to be provisional, but we do not see why it should not serve. The question is, Is the Apple worth eating? This Apple has been grown for years by Mr. Jacobs, of Petworth.

A neglected native shrub.—The wild Guelder Rose or Water Elder (*Viburnum Opulus*) deserves a place in every garden. It is a better shrub from a picturesque point of view than the double Guelder Rose so common in cultivation; the flowers are more graceful, and it has another season of beauty at this time of year when loaded with its brilliant glossy red berries, shortly to be followed by the rich colouring which the leaves assume later in the autumn. It is a beautiful object whether in flower or fruit, as it grows by streams and hedges of water meadows. It abounds in the valley of the Kennett, in Berkshire, where it forms a conspicuous ornament in the meadow landscape. This fine shrub seems to be unknown in nurseries. It is easily raised from seed.—G. J.

Hibiscus syriacus.—Amongst flowering shrubs this Hibiscus stands out prominently just now. In hot, dry, sandy places it is not seen to advantage, as the foliage assumes a sickly yellowish tint so unlike its general appearance when in good health. The most suitable soil for it is that of a fairly open character, which is always moderately moist without being too wet. There are now great numbers of varieties of it enumerated in catalogues bearing both single and double flowers. Amongst these a few of the best are the double white, Celesté, a single sort, having flowers with a pleasing shade of blue; totus albus, pure white; purpureus, deep purple; double red; Lady Stanley, cream striped with red; purpureus variegatus, purple mottled with white; Boule de Feu, bright red; cœruleus fl.-pl., bluish; and roseus, pink. The propagation of this Hibiscus is by no means difficult, as cuttings strike pretty well either put in during summer when growing and kept close till rooted or taken during autumn and wintered in a frame. The readiest way, however, of increasing the different varieties is grafting on pieces of the root, selecting for this purpose, if possible, those with a few attached fibres. This may be done in the spring, when a union is soon effected. Besides this, the single kinds ripen seed readily, from which plants may be easily raised, either by sowing in pots or pans and placing them in a frame if the seeds are few, or, if in quantity, in the open ground. A fine series of the various varieties of this shrub has been sent to us from Mr. Anthony Waterer's, Knap Hill Nursery, Woking.

In a garden.—A friend sends me a book which has been a great treat to me to read. It is "Days and Hours in a Garden," by "E. V. B.," a lady who has the gift of expression with pen and pencil alike, and who tells us frankly most of the joys and sorrows which a garden yields. With the assistance of a skilful gardener possessed of common sense and uncommon good taste, the fair authoress has had all the experience of turning an old wilderness into a home garden, into which the gifts of friends and the spoils of travel in the sunny south find a home. Artistic in other ways, "E. V. B." seems to have brought art into her garden, and art of the best—not dreamy, but practical—for in her garden are Apples as well as Asters, and Peas and mellow Pears as well as Pentstemons and Phloxes. Like all true gardeners, she has sympathy with everything that lives, bird and butterfly; even the spiders are not unobserved, and so her book, in its pale binding, contains something inside which reminds us of Alphonse Karr, of Jules Michelet, of Bacon and Parkinson, of all gardeners, true and gentle, both old and new.—F. W. B.

PLANTS IN FLOWER.

Double Caltha.—This water plant is seemingly flowering out of its season. Mr. Ware sends us a handful of extremely fine flower-stems of the bright orange double variety as fine as it is usually seen in spring.

Gaillardias.—A gathering of several varieties of hybrid Gaillardias has been sent to us by Mr. Barker from his nursery at Littlehampton. Besides the ordinary single kinds there is the new *Lorenziana* variety, and a wholly yellow form of it, all extremely showy border flowers. On the warm Sussex coast the Gaillardias are perfectly hardy perennials and thrive to perfection.

Gloriosa superba.—This valuable stove climber bears curious butterfly-like flowers of a beautiful maroon colour. I saw it growing freely and flowering profusely in Messrs. Cypher's nursery at Cheltenham the other day, and at a show there a first prize for glasses of flowers for a dinner-table was awarded to Miss Cypher for a choice combination, in which this *Gloriosa* was conspicuous.—CAMBERIAN.

Autumn hardy flowers.—A little gathering of showy flowers from Mr. Kingsmill's garden at Eastcott, Finner, indicate that open-air borders are not yet flowerless. The brightest of the gathering consists of *Dianthus Atkinsoni*, Iceland Poppies (*Papaver nudicaule* in variety), *Plumbago Lar-pentæ*, *Zauschneria californica*, *Platycodon grandiflorum*, *Phgelius capensis*, *Hibiscus syriacus*, *Colchicums*, and some fruiting twigs of *Rosa rugosa* laden with large globular orange-red hips, highly ornamental.

Magnolia grandiflora.—While in Cheltenham the other day I saw several fine specimens of this valuable Evergreen growing luxuriantly against the fronts of some of the houses; one was bearing several of its massive blooms, and I was told by a friend that he had seen a large plant of it near the centre of the town bearing between two and three dozen flowers. As a wall plant this *Magnolia* is showy either in or out of bloom, and as a town plant it is so seldom seen that the fact may be worth noting.—CAMBERIAN.

Semi-double Dahlia.—I have read with interest your description of a semi-double Dahlia from Mr. D. T. Fish. Singularly enough, I have out of about 100 single Dahlias raised from seed one plant full of bloom similar to the one you describe. I enclose two blooms of the same for your opinion. You will observe that the extremities of the ray florets have a peculiar slit, which does not appear in your description of the bloom sent by Mr. Fish.—J. WEST-JONES, *The Hollies, Shelton, Stoke-on-Trent.*

*** The flowers sent by our correspondent seem to be precisely similar to those sent by Mr. Fish last week both in form and colour.—ED.

Red and white Lapagerias.—One of the most beautiful displays of the *Lapageria* that we have ever seen is that now in perfection in the entrance corridor at the Royal Exotic Nursery, Chelsea. Here, under the span roof, myriads of red and white *Lapagerias* may be seen, in most instances strung on long drooping slender shoots hanging in all directions in great profusion. The mixing of the two varieties seems to add greatly to the charms of each. The plants in this house were replanted about two years since, and now they are just deriving the benefit from the new soil.

Eupatorium ageratoides.—As a September hardy flower this North American composite undoubtedly possesses merit, and is particularly useful for furnishing a supply of light and feathery white flower-heads for cutting. The flowers are produced in broad, dense, flat heads, and are pure white. It is a vigorous grower, an abundant flowerer, and rarely refuses to grow anywhere. Some capital specimens of it are sent from Mr. Stevens' garden, at Byfleet, along with a gathering of numerous varieties of florists' *Pentstemons*, which are finer this year than usual, the spikes of bloom being longer, the flowers larger, and the colours brighter.

Two good autumn flowers.—Mr. Ware sends us some admirable flowering specimens of the Californian *Zauschneria californica*, with slender stems beset with numerous bright scarlet Fuchsia-like blossoms, and *Stokesia cyanea*, a showy composite with large heads of deep mauve-purple. Both are

indispensable border flowers, and particularly the former, as it is so unlike any other hardy flower. It is a capital rock garden plant, but requires a place to itself, inasmuch as it will soon overrun every other plant near it. The *Stokesia* is a good plant, too, but not so desirable, as it does not always open its flowers freely in the open air. It is grown largely by the market growers about London, who place the cut blooms under glass in order to fully open them.

September hardy flowers.—I was gathering some flowers this morning for a harvest festival, and a bunch of them looked so fresh and pretty, that I am induced to send it to you. They are all hardy and such as you know, for instance, several *Colchicums* and *Crocuses*, *Tropæolums*, *Amaryllis Belladonna* *blanda*, *Senecio pulcher*, *Solanum jasminoides*, *Zephyranthes Atamasco* and *candida*, *Sternbergia*, *Rhynchospermum jasminoides*, *Modiola geranioides* (a pretty Mallow), and the dark *Cosmos atropurpureus*, *Hypericum oblongifolium*, *Tropæolum tuberosum* and double form of *T. majus*, *Origanum pulchellum*, *Salvia patens*, and others.—T. H. ARCHER-HIND, *South Devon.*

*** A beautiful gathering indeed.—ED.

The Belladonna Lily.—I send you herewith the first bloom-head of one of two new varieties of *Amaryllis Belladonna* sent me several years ago by Herr Max Leichtlin, of Baden-Baden, and now blooming with me for the first time. Its distinctive name has long ago been lost and disappeared, but if I recollect rightly he called the two varieties respectively *A. B. striata* and *purpurea*, so I conclude this to be the first named of the two. I send with it a small head of the ordinary form of this beautiful autumn-blooming hardy *Amaryllis* to enable you to compare it with the new variety which I consider a most beautiful and desirable novelty, and shall be glad of your opinion as to its merits.—W. E. GUMBLETON, *Belgrove, Queenstown, Co. Cork.*

*** Decidedly much superior both in size and colour to the ordinary form. The colour is a glowing rich rose-pink, several shades deeper than usual, delicate pencillings of the same colour extending into the white throat. This variety would soon supersede all others could it be propagated largely.—ED.

Hybrid Lobelias.—A most beautiful series of hybrid varieties of tall herbaceous *Lobelias* has been sent to us by Messrs. Backhouse from their nurseries at York, where the plants are said to be quite hardy, and are highly valuable for the open borders at this season. The sorts sent are named *Vesuvius*, intensely deep crimson-maroon; *Diadem*, brilliant purple, evidently a hybrid of *L. siphilitica*; *Vizza*, crimson-purple, very brilliant; *Firefly*, fiery crimson; *Challenger*, brilliant purple, inclined to violet; *Ignea*, the well-known form with deep red foliage. The above form the finest set of varieties of *Lobelia* that we have yet seen, and we scarcely imagined that such variety and richness of colour existed among them. They are indeed exceedingly useful autumn flowers, and quite indispensable.

The Nash Court Lapageria.—At the show on Tuesday last at South Kensington Mr. G. Humphrey, the gardener at Nash Court, Faversham, exhibited some magnificent wreaths of the superb variety of *Lapageria rosea*, on which we commented a short time since, and which we suggested should be called the Nash Court variety. The flowers were even larger than those sent to us, and the peculiar white mottling and veining in the interior of the petals was more conspicuous. Mr. Humphrey showed by the side of it some flowers of the variety known as *rubra* for comparison, and the superlative beauty of the Nash Court variety was by the contrast rendered more distinct, although *rubra* is considered so much finer than the ordinary form. The numerous flowers which the shoots carried and the vigorous foliage indicated that *Lapagerias* are grown to perfection at Nash Court. Mr. Humphrey also showed flowers of some of his seedling tuberous *Begonias*, among which a fine large double of a soft carmine hue

we thought as fine as any we have seen exhibited; likewise a single, with flowers 4 inches across of an intensely deep crimson.

Acis autumnalis and Colchicum minimum.—Passing by the gorgeous display of *Asters*, *Helianthus*, and other large plants which are so abundant at this season, I send you two of the smallest beauties now in my garden, viz., *Acis autumnalis* and *Colchicum minimum*. I do not think that either of them is sufficiently known. There is another species of *Acis*, *A. trichophyllus*, which I have not seen for some years, and I should be much obliged if any of your correspondents could tell me where it is to be had. It differs from *A. autumnalis* in colour of flower, being pure white instead of being tinted with purple at the base of the corolla; in having the segments of the corolla perfect instead of being in the alternate petals notched; in the time of blooming, which is spring instead of autumn, and in being a native of Eastern Russia, whereas *autumnalis* is found at Gibraltar and in various parts of Spain and Portugal. *Colchicum minimum* I had from the neighbourhood of Rome.—T. H. ARCHER-HIND, *South Devon.*

*** Two sweetly pretty bulbous flowers, unhappily too rare in gardens. Both seem to succeed admirably with Mr. Archer-Hind.—ED.

Daphne rupestris.—One of the prettiest sights we have seen for some time in the Kew rock garden was a tuft of this beautiful little evergreen *Daphne* nestling under an overhanging ledge of rock, and literally covered with its pretty rosy flowers, almost hiding the small shining dark green leaves, so closely were they packed together. It is perfectly hardy, and seems to thrive well and slowly increase in size, though the position is a little exposed. The soil used in this case consists of black peaty loam with a good mixture of limestone, or old spent lime broken up into small pieces. *D. Blagayana*, a good companion to the above, also flourishes well under the same conditions, and makes a very useful spring-flowering plant; its pure white flowers are produced in clusters of from ten to a dozen or more on each head and are deliciously fragrant. Both of these *Daphnes* may be increased by layering, but much more satisfactorily by grafting on their own roots, which may be done either in autumn or early spring.

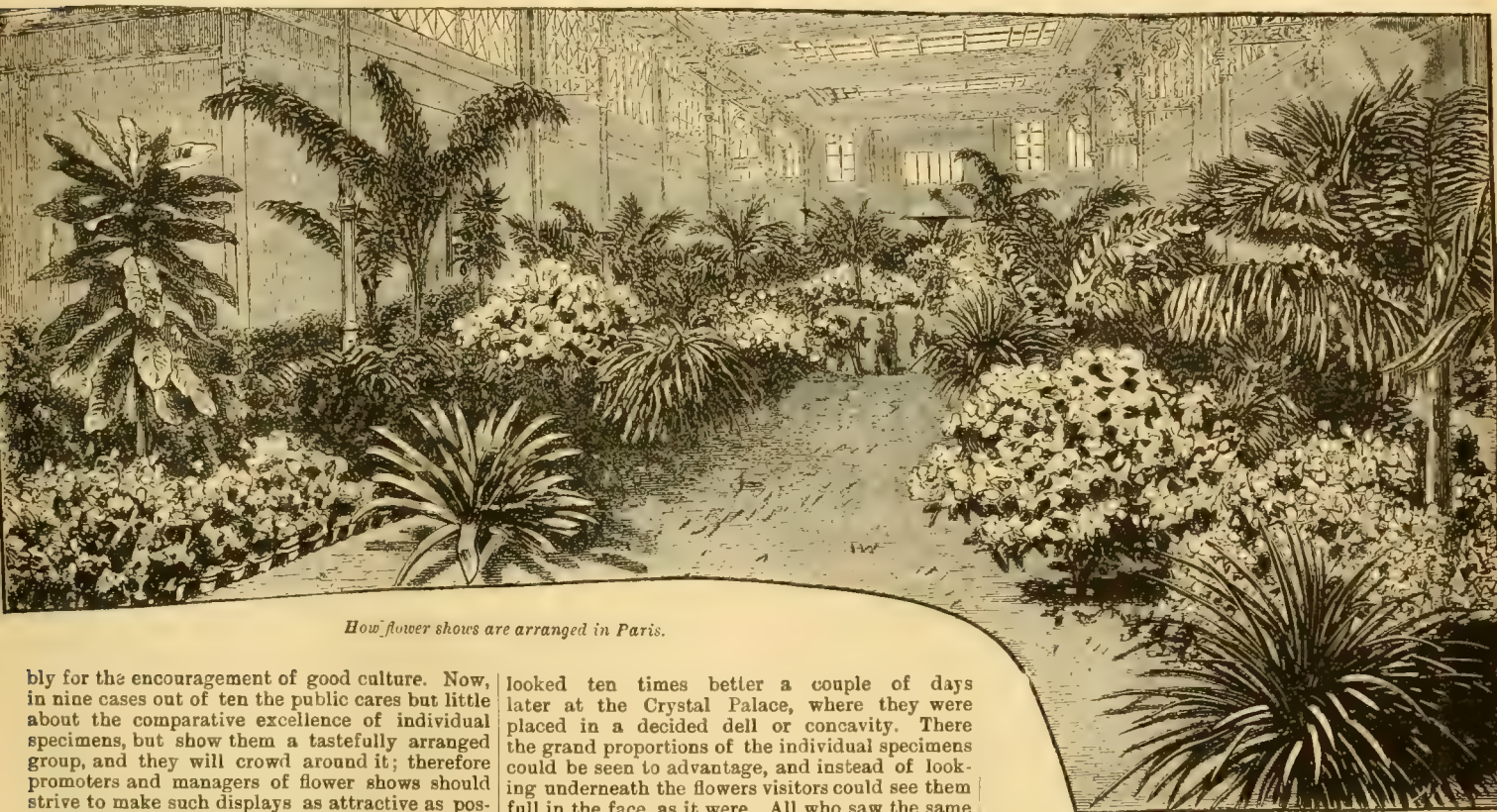
Nymphaea gigantea.—Just as the yellow *Nelumbium* deserves to be styled the Queen of the Western Waters, so does *Nymphaea gigantea* merit the title of Queen of Eastern Water Lilies; but it is only when in their native rivers and lagoons that either plant is at all queenly, for so far as the efforts of cultivators in this country have gone, neither the *Nelumbium* nor the *Nymphaea* approaches in size or in beauty the species already established at home in our plant aquaria. Take as an instance of this the three forms of *N. gigantea* now flowering in the Water Lily house at Kew; although these will be found to be quite equal to what *N. gigantea* has been induced to do hitherto, yet on comparing them with *N. zanzibarensis*, by the side of which they are growing, they quite sink into insignificance. Mr. Lynch's success with the yellow-flowered *Nelumbium*, compared with what the plant is when seen as described by Mr. Hovey in *THE GARDEN* last year, was not what might have been expected, and yet we have every reason to believe that the treatment Mr. Lynch gave his plant was such as ought to have met with complete success, had success been achievable. With *N. zanzibarensis* established and at home with us, we need not trouble ourselves much about the Australian Water Lily, but a yellow *Nelumbium* as grand as it is known to be in North America is still a great desideratum in the gardens of this country. The three forms of *N. gigantea* which are now in flower at Kew differ from each other in the shade of blue, one being a clear blue, another paler, and a third almost white. We may here note that a new *Nymphaea* from North America has been added to the Kew collection; it bears the name of Mr. Sturtevant, whose zeal in the cultivation of aquatic plants is well known both here and in the States.

ARRANGEMENT OF FLOWER SHOWS.

To arrange plants effectively and tastefully requires, under any circumstances, the exercise of considerable skill and judgment, but more particularly at flower shows, where the limited amount of time generally at command and the heterogeneous material to deal with combine to render the matter more difficult. That flower show arrangement is not so simple as is generally supposed is obvious from the fact that where we see one exhibition arranged with taste and skill we find nine that are the reverse. As a rule, we do not trouble ourselves so much about effective arrangement as do our neighbours on the Continent, particularly in France, though, as a matter of fact, we have not much to learn from them in this respect. With us the first consideration at flower shows is displaying the individual plants to advantage, while with them this is subservient to the arrangement for general effect. As to which is the best course to follow, the public perhaps are the best judges, and it is for the public to a great extent flower shows are promoted, though ostensi-

necessary diversity of outline, so important an item in plant arrangement. These remarks obviously apply only to plants. In the case of fruits and vegetables it is different; stages in their case must be used so as to bring the exhibits near the eye. Now, with regard to permanently laid-out show grounds, so far as my experience goes they are all on one plan, and look as if cast out of one mould. All have rising mounds here and there; all are more or less symmetrically placed. None have the little dells to correspond with the little hills; consequently the surface or outline is not so much diversified as it might be. In many cases plants have a far finer effect when placed below the eye than above it. A case in point occurred during the present season. At the Regent's Park summer show there was shown a magnificent group of Clematises from the Woking Nursery. These as usual (for the positions of particular exhibitors' exhibits are apparently unalterable) were placed on a mound at the right of the Orchid bank. The specimens had certainly a very fine appearance, but the same plants

stateliness being enhanced by rising out of a groundwork of greenery or colour as the case may be. A good attempt has also been made to hide the pots, and this is a point that needs careful consideration where a tasteful arrangement is aimed at. At Continental flower shows it is the practice to first judge the exhibits and to re-arrange them afterwards without much regard as to whom the particular plants belong. By this system a great advantage is gained, as the designer of the show, and not the exhibitors, is responsible for the general effect; hence the show is the outcome of one person's taste, be it good or bad, instead of a mixture of good, bad, and indifferent tastes. A similar style of plant arrangement is represented by the woodcut on page 271. It shows the interior of the horticultural hall at the great Philadelphia exhibition a few years ago. This style is not to be commended, so far as can be judged by the illustration, inasmuch as the whole appears to be just a thicket of various plants placed without regard to displaying either their individual character or diversifying the outline. Moreover,



How flower shows are arranged in Paris.

bly for the encouragement of good culture. Now, in nine cases out of ten the public cares but little about the comparative excellence of individual specimens, but show them a tastefully arranged group, and they will crowd around it; therefore promoters and managers of flower shows should strive to make such displays as attractive as possible. There is, as a rule, abundant material at any show to make a veritable floral paradise if used in the best way, but let the same material be arranged in monotonous rows on benches where little besides the pots can be seen, and even beautiful plants may fail to charm. It is satisfactory to see that during the past few years at provincial as well as metropolitan shows high ugly stages are being abolished, and the plants arranged at or below the level of the eye, their beauty being thus seen to advantage. It is only perverted taste or a servile adherence to custom that would sanction beautiful plants being placed on benches where one has to make an effort to see them properly.

In country villages and small towns where shows are not habitually held in the same place it is of course more difficult to arrange the exhibits than at places where, as at Regent's Park, South Kensington, Manchester, Birmingham, and other large towns, there are permanent show grounds designed expressly with the view of displaying the plants to the best advantage. Improvised stages of some sort in such cases are a necessity, so as to give the

looked ten times better a couple of days later at the Crystal Palace, where they were placed in a decided dell or concavity. There the grand proportions of the individual specimens could be seen to advantage, and instead of looking underneath the flowers visitors could see them full in the face, as it were. All who saw the same group at the two places decided in favour of their effect at the Palace. The huge Roses in pots, too, have a finer effect where not perched so high on mounds that the pots are on a level with the eye. Arranging a flower show in a purposely laid out spot is much simpler than on a flat floor, such as that of a hall. In such a case it requires all the skill and taste possible to create a good effect. Of the French style of flower show arrangement, the accompanying illustration of one of the shows in Paris is a fair example, and is given not because "they do these things so much better in France," but as an illustration of how M. André managed to create a beautiful floral display on a flat surface with not very picturesque surroundings. Here, as may be seen, the chief aim has been to diversify the outline, which the great bold-leaved specimens do admirably, and not only that, but the plants themselves are displayed to the fullest advantage; one can see them all round, not on one side only, and their value as decorative plants is at once seen. By this arrangement noble Palms, Tree Ferns, Cycads, Aroids, Bromeliads, and such like plants can be employed with the best effect, their

the whole of the heads of the plants seem to be above the eye. W. G.

GARDENS IN IRELAND.

MUCH of the coast and inland scenery in the western parts of Ireland must gratify, if not exceed, the most sanguine hopes of the travelled tourist, as it is in many respects unique in the scenery of Europe. Majestic sea-cliffs, water and storm-worn; wild, heathery moorlands; lofty limestone hills with fantastic crags and summits; broad, sweeping valleys and rocky forelands jutting into beautiful sea-bays or inland lakes whose shores are often richly wooded or bright with the golden Gorse and purple Heather, and lovely wild flowers are among its leading characteristics, whilst many of the picturesque reaches of the blue Atlantic that run for miles inland along the coasts of Connaught and Munster can only be compared with the mountain fiords that indent the Norwegian coast line. But I refer now more especially to the Western Highlands of

Ireland (Connemara), which possess attractions to the lover of Nature, the angler, sportsman, and man of science of a very exceptional kind. The district has of late grown much in popular favour, and everywhere now there are clean comfortable inns (with moderate charges) and a peasantry whose kindness and hospitality are a pass-word wherever they are known. I have lately spent a very enjoyable holiday in the west and south-west of Ireland, and though I have seen much of the best scenery in many countries, I do not know any one of them that has made a more favourable impression upon me than that which I have just left. But what charmed me as much as anything were the several public and private gardens which I visited and which I had seen rarely equalled. Many readers of THE GARDEN will doubtless know well the beautiful public gardens and conservatories at Glasnevin, near Dublin, but not so many, I imagine, are acquainted with those charming grounds and gardens that are occasionally met with in remote districts in the west. On one occasion we drove a long distance by way of Leenane, an attractive seaside spa on the Killeries, through the Kylemore Pass; the road skirted the lake, and for miles presented one long line of crimson formed by hedges of Fuchsia. We turned into the park surrounding the palatial mansion of Mr. Mitchell Henry, M.P., and were privileged the inspection of his beautiful and extensive grounds and hothouses. The fruit houses are both numerous and well stocked. Their genial and hospitable proprietor seems to be sparing neither labour nor pains to make this once desert and bog into an earthly paradise. The glasshouses in particular are as fine as any I have ever seen. But I think the most impressively beautiful demesne which I visited in Ireland was that of Lord Ardilaun at Ashford, Cong, to the north of Lough Corrib. His lordship was not at home, but I obtained a permit from Mr. Hawkins, his agent, who kindly conducted me over the grounds. They are by nature superior to those at Kylemore, and altogether better adapted for gardening purposes. The advantages of a fine climate and a beautiful sheltered situation leave nothing to be desired. The kept grounds are all laid out on the level and cover twenty-six acres, being pleasantly watered on the south by an arm of Lough Corrib, and surrounded by a fine mountain background, which gives additional effect to the landscape. The grand terrace runs from the castle in a straight line 700 yards in length, and is intercepted at regular intervals by three broad flights of steps. The carriage drive, which is seven miles long, runs from the castle doors to the foot of the Ben Levi Mountain, and throughout the distance is planted with the choicest specimen trees, many of the Pine tribe, such as *Pinus insignis* and *Picea nobilis*, flourishing wonderfully well. At intervals on the route openings in the trees reveal enchanting views of wood, and lake, and mountain, and the murmuring waters of the lake are heard and seen from the windows and grounds close to the house, where the fine steam yacht "Lady Olive" (named after his lordship's amiable lady) plies upon the lovely lake for the pleasure and convenience of his lordship's family and guests. There is a fine deer park to the east of the castle, stocked with several hundred red and other deer. The gardens and pleasure grounds are magnificent, and have been designed and arranged solely by Lord Ardilaun himself and his clever wife. In a work so complicated and extensive it is but scant praise to observe the consummate skill and good taste that have been brought to bear in the execution of so onerous a task. At the time of my visit the gardens were at their best, and Mr. Andrew Campbell, the head gardener, took evident pride in pointing out to me their chief features and specialities. Among the large collection of herbaceous plants, I noticed a fine row of pink and white Japanese Anemones 5 feet or 6 feet high, and *Lobelia Queen Victoria* (in fine flower) 4 feet high; also *Funkia grandiflora*, with forty spikes of flower on each. In the American or Grass garden were clumps of scarlet *Tritoma* with from 80 to 100 blooms on each 5 feet high. The Stocks were particularly good this year, and the

clumps of Pampas Grass of 500 to 600 spikes were preparing to throw out their conspicuous plumes. The terrace beds were well and tastefully planted. The first terrace in particular claimed our attention. The flower beds on either side were in scroll pattern, with alternating centre circular beds. Dark *Heliotrope* in scrolls and *M. MacMahon* *Geranium* edged with *Kleinia repens* produced a very pretty effect. The centre beds contained *Acacias*, *Castor-oil* plants (*Ricinus africanus*), and Mr. Campbell drew my attention to an exceptionally fine and well variegated *Lavatera arborea* occupying one of these centre beds. After enjoying a lengthened survey of the ornamental grounds, we turned our attention to the glass-houses and ferneries. These are well stocked, and contain many splendid types. It was a treat to walk through these houses, everything looked so clean and well kept. I was especially captivated with the lovely blossoms of the *Allamanda magnifica* and *Lapageria rosea* and *alba*, each of which trailed along the several roofs for upwards of 40 feet. But the bare mention of the floral treasures I saw displayed would be an exhaustive task. Some of the Ferns I saw were very fine. Specimens of *Adiantum cuneatum* measured 4 feet through and *A. farleyense* 5 feet through. I also observed one or two remarkably fine examples of *A. gracillimum*, the finest of all the Maiden-hairs. An outside rockery was also pointed out to me containing a large collection of local wild Ferns. These latter are very abundant and beautiful on the limestone around Cong. Mr. Hawkins kindly presented me with an assortment (which I dispatched in a box home) from his own garden that had been obtained wild in the neighbourhood. Since my return I have given several roots away to friends, and they are much prized. Altogether I was delighted with my short stay at Cong, which I quitted by a beautiful sail down the whole length of Lough Corrib, about twenty-five miles, to Galway en route for Killarney.* H. SPEIGHT.
West Bowling, Bradford, Yorks.

NOTES.

Autumn blossoms have quite a charm of their own. It is true they have not the unworn freshness of the flowers of spring, but they have a mellow ripeness and richness of colour very pleasant to see. The Tiger Iris is yet opening its gaudy scarlet flowers, and great bunches of Cyclamen, white and purple-rose, grace the bare ground beneath the Apple trees. A friend of mine who is very fond of Orchids went to see an old ducal garden the other day where hardy flowers are more appreciated. On one side of a long walk were masses of scarlet *Gladioli* and *Tigridias*, and on the other clumps of *Colchicums* were in blossom. So effective were these flowers of autumn in the cool fresh air of a September day, that my friend could not resist admiring them. "Yes," was the reply; "they are as beautiful as your Orchids. These *Gladioli* serve us for Disas, and for *Pleiones* we have the *Colchicums*."

Solomon's Seal in autumn.—It is a fortunate thing that so many of our garden plants are twice beautiful during the cycle of their year's growth. Take the spring blossoming of our orchards, and contrast that vernal phase with the mellow ripeness they exhibit now. It is so with this old-fashioned plant, which is so well illustrated and described in THE GARDEN, p. 236. In spring its pearly flowers are all beautiful, but now each leafy stalk with us bears fruit, which if pearly, most resemble the black pearls of the Bornean coast, which if not more beautiful than the white ones are far more costly, because more rare. Even if this plant never blossomed, even if its Sloe-like fruit was never developed, it is so

* To those who wish for a nearer acquaintance with this beautiful district I recommend the Midland Great Western Railway Company's newly-issued "Guide through Connemara and the West of Ireland," which contains sixteen full page lithograph views (from photographs), numerous woodcuts, maps, and much general information. The price is 1s., and the book may be had from the manager, Mr. J. E. Ward, Broadstone Terminus, Dublin, or at Messrs. Smith & Son's railway bookstalls.

graceful in its growth that it would be well worth culture as a foliage plant alone. As it is, it possesses a threefold grace, and that it is within the reach of all is an additional advantage.

Bulbs from Italy.—In the old days many of the bulbs now imported from Holland or from New Jersey used to come from Italy, and perhaps old fashions may revive in this direction. A courteous amateur has been so good as to send me a copy of Messrs. Damman's catalogue of bulbs, flower roots, Orchids, &c., and I have enjoyed meeting therein with many old friends not usually sold by our home nurseryman. Messrs. Damman and Co. make quite a speciality of bulbs, and offer several new and some rare *Narcissi*, which are not to be obtained elsewhere in Europe. In all matters of this kind we cannot be too broad in our sympathies, and, judging from the catalogue alluded to, English amateurs may like to know of a firm in such a good climate as Italy undoubtedly is for well-ripened bulb growths.

Japanese Maples.—We have had some beautiful plants imported from Japanese gardens, but none more delicately beautiful and certainly none more generally useful for decorative purposes than are these dwarf cut-leaved *Acers*. They are always attractive from the first day their tender young leaves appear until late in autumn, when their dying foliage assumes all the hues of the waning year. Early in the year they add a grace and elegance to groups of spring flowers not attainable by any other means, as the lovely arrangements made by Messrs. Veitch & Sons at Regent's Park with these plants intermixed with Orchids, &c., amply prove. They are perfectly hardy, but if early leafage is desired, it is best to winter them in a cold frame or pit, from which they can be placed in a greenhouse temperature as desired.

The Sea Hollies.—*Eryngiums* of various kinds are and have been very decorative in our beds and borders. The best we have is undoubtedly *E. Olivierianum*, which we have long grown under the better known name of *E. amethystinum*. This plant does well here, and is quite easily increased by mincing up a plant, roots and all, in the spring and planting the pieces. Mr. Wolley Dod, writing in a contemporary, states that he lost a plant by dividing it in the autumn, which is most likely, as but few fleshy-rooted perennials like to be disturbed at that season. *E. planum* is a pretty biennial, with steel-blue heads as big as marbles. *E. dichotomum* and *E. giganteum* are also grown here, along with the native *E. maritimum*, the last being by no means the least ornamental. *E. campestre* is one of the most distinct of the perennial kinds, but *E. Olivierianum* is by far the most beautiful, and should be largely grown.

Plants for windows.—*Geraniums* and *Fuchsias* are by no means the best of plants for indoor window gardeners to grow. Perhaps the best of all room plants is *Aspidistra lurida*. *Draena rubra* is also a good evergreen, as is also the Japan *Aralia Sieboldi*. *Saxifraga sarmentosa* does well in a hanging pot or basket, so also *Campanula Barbellieri*, and the scarlet-flowered *Scarborough Lily* (*Vallota purpurea*) should always have a place. For spring flowering *Hyacinths* will of course be grown, but equally easily grown and more uncommon is *Lachenalia tricolor* or *L. luteola*. A few Daffodil bulbs potted now and plunged in ashes out-of-doors until spring could then be brought inside when in bloom or in bud. They are beautiful as well as fashionable.

The white Zephyr flower.—"It is an ill wind that blows no one good;" and so, although the past dry season has dried up and scorched off some things, it has brought into prominence other plants which are either weedy, leafy, or flowerless altogether during ordinary rainy summers. Here, for example, we had great clumps of *Zephyranthes candida* on which flowers were rarely, if ever, seen before, and these just now are like a mass of snowy *Crocus* flowers. Either as seen growing or when cut the waxy white flowers of this plant are most attractive, and although not so fine as those of *Z. Treatiae* or *Z. Atamasco*, yet we shall never

despise its modest beauty after having once seen it in perfection. Now we are not without hope that some mysterious bunches of green leaves supposed to be those of *Sternbergia lutea* will also yield us blossoms in due time. VERONICA.

GRAPES AND ORCHIDS AT CLOVENFORDS.

IF there is one place in Scotland more than another that a gardener ought to visit that place is the Tweed Vineyard at Clovenfords, a place which lies in the beautiful valley of the Tweed, about an hour's ride by rail from Edinburgh. Here may be seen Grape growing for market carried out to the highest perfection, and on a scale only to be compared with a few of the very largest Grape growing market gardens in the neighbourhood of London and in the Channel Islands. Not only are Grapes grown to the highest pitch of excellence, but the whole place is in high keeping, thus affording a striking contrast to London market graperies, where the rough-and-ready system pursued renders cleanliness and tidiness almost an impossibility. In walking through Messrs. Thomson's establishment one might fancy oneself in the garden of a Rothschild or Buccleuch, so well managed is every part of it. This trimness and clearness is the first thing that attracts attention, being noticeable before one comes to the magnificent crops of Grapes. There is an enormous extent of glass here, amounting in the aggregate to something like a superficial area of 90,000 feet. The greater portion of the houses is devoted solely to the production of Grapes, which during winter are sent to Covent Garden Market, a distance of nearly 400 miles. It is a good many years since Mr. William Thomson first settled at Clovenfords. It was his intention at the outset to devote the place entirely to the production of Grapes and Pine-apples, but since then circumstances have been altered. Grapes, it is true, are still in universal demand, meeting with a ready sale, particularly such high-class fruit as the Tweed Vineyard produces; but Pine-apple culture has of late years been abandoned, here, as well as in many private gardens, owing to first-rate Pines being imported abundantly from hotter climes. Consequently, the houses and pits set apart for Pines had to be filled with something, but being in most instances ill adapted for Grape growing, Messrs. Thomson thought the best thing to do was to grow a collection of Orchids, as it was anticipated that these plants would be in great demand and would prove most remunerative. The collection, growing as it has been for years, has now assumed gigantic proportions, filling a good many capacious houses; in short, it is by far the largest, the best cultivated, as well as the most select trade collection anywhere north of York. So with Grapes and Orchids alone Messrs. Thomson are enabled to keep themselves and their staff in active employment throughout the year, for after the Grape crop is harvested the Orchid department demands their whole attention until the vineries are in active work again. The visitor will find nothing else at the Tweed Vineyard but Grapes and Orchids, and it is no doubt owing to the fact, that the establishment is devoted solely to these two objects, that such remarkable results are obtained.

As was said before, the Grapes take up the bulk of the houses, but the visitor must not expect to find a collection of sorts; on the contrary, the number of kinds grown is extremely limited, but these few kinds have been selected with due re-

gard to the exigencies of the business. Messrs. Thomson never begin to cut and send to market before the autumn is well advanced or the winter has set in; consequently no forcing is needed; moreover, only late or good keeping sorts are grown. It is a very different thing growing Grapes on an extensive scale to supply a market 400 miles distant from the culture in private gardens; consequently the kinds that are selected in this case must first of all be good travellers—this is the main consideration. Secondly, they must be fine-looking Grapes in order to take the eyes of salesmen, who are generally pretty accurate judges of what the public want. It is not many Grapes that will comply with these conditions; they may be fine looking and of excellent quality, but bad travellers. A case in point is the Duke of Buccleuch variety, which, though the handsomest white Grape in cultivation and of unquestionable quality when well grown, is almost worthless for Mr. Thomson's purpose, although he is the fortunate raiser of it, and thinks so highly of it as a Grape for private gardens. The selection which forms the mainstay of the Grape supply here are Muscat of Alexandria, Lady Downes, Gros Colmar, and Black Alicante; others are

like to make before offering a few comments upon the Orchids, and that is respecting the Duke of Buccleuch Grape, a variety which perhaps beyond all others has been both belauded and decried. Seeing is believing, and anyone whose perception is not blinded by prejudice may see for himself as grand a crop of this Grape at the present time as it is possible to behold. Here in the corridor terminating the main group of vineries are several rods carrying not only a heavy crop, but weighty, well shaped bunches and with huge berries of that bright amber colour which alone indicates first-rate quality and high finish. A person must have a very critical palate, indeed, if he pronounced against the flavour of this Grape when so highly finished. The berries are firm, very juicy, and with a delicious aroma. It is a fault, if fault it be, that it possesses a thin skin—too thin, in fact, for safe transmission to any great distance, and this is the sole reason why it is not grown by the houseful at Clovenfords, and does not have so much attention paid to it as do the other sorts sent direct from the Vine to the table. It is a most valuable Grape, particularly when grown and finished as here, at Trentham, Gunnersbury, and other well-known gardens.

ORCHIDS.—These are grown extensively and in great perfection. The pure moist air of the Tweed valley, the peculiar form of the houses, the soil used, the care and attention bestowed upon them, all combine to this result. Though so large, it is not what may be called a full collection, preference being given to particular classes and genera, and, above all, to the growth and propagation of the finest varieties. The great features in it are the Vandas, Cattleyas, Lælias, Cypripediums, Odontoglossums, and Masdevallias. These occupy a good many houses, which were formerly the Pine pits. None of these are small, mostly all being long and narrow lean-to structures, just the stamp of house that a practical Orchid grower would choose, inasmuch as they afford plenty of



Interior of Horticultural Hall, Philadelphia, at the Centennial Exhibition (see p. 269)

grown, but not in large quantities. Not a bunch is sent to London before the season is well advanced; indeed, not a bunch of Lady Downes is sent before March. Then Grapes are scarce, and those of good quality fetch good prices. Every season an improvised Grape room is formed of one of the large vineries, an old one that is dry and airy. Here the crops are preserved after being cut. All the houses are handsome large structures, the main group consisting of span-roofed houses 200 feet in length by 24 feet wide and 18 feet high, having the borders inside and out. As the Grapes are just now either ripe or finishing, it is a fine sight to stand at one end of these capacious houses and look along under the roof, which is quite blackened by the sable crop so profusely hung on them—so even, too, that there is scarcely a vacant square foot throughout. As we are continually hearing so much about the evil effects of over-cropping, it is not a little surprising that Mr. Thomson is enabled to go on year after year taking such enormous crops from his vineries. The bulk of the Vines are just now in full bearing condition, being from ten to thirteen years old. A practical Grape grower would be greatly interested by a visit to this place, as he would not fail to pick up many useful hints as regards the culture pursued; but as the details of this have been so thoroughly dealt with by Mr. D. T. Fish in *THE GARDEN* (Vol. XXII., p. 413), there is no need to go over the same ground again, and those interested in the subject can easily refer to that account. There is one remark that I should

light, and do not contain such a body of stagnant air as do exceptionally large houses. As with the vineries so with the Orchid houses, they are everywhere clean and tidy even to a fault. But this cleanliness of the houses is as important as keeping the plants thoroughly clean. Of course in this place so far removed from any big town there is no black-laden atmosphere to leave layers of soot on the foliage, and no doubt the cool, moist atmosphere of the locality also favours the healthy growth of the Orchids. As an example of these Orchid houses, that devoted to Cattleyas might be mentioned. This is a lean-to 150 feet long by 14 feet wide, with stages at the front and back, with ample provision for heating and ventilation. This house contains a marvelously rich stock of the choicest Cattleyas and Lælias. Among the most select may be noted the white Trianae, the white Skinneri, the white Mossiae, some superb forms of Gaskelliana (a great favourite here), and Mendelli, besides such varieties as C. Schofieldi. The Lælias, like the Cattleyas, are just now finishing their growths, many of which are double from the same break. Adjoining this is the Phalaenopsis house, and what strikes one as soon as it is entered is the absence of that stifling heat and moisture that as a rule are maintained in East Indian houses; this house seemed no hotter than the Cattleya house. There are some uncommonly fine clean specimens of the various Phalaenopsids, particularly Schilleriana. Some of the Aerides, too, are grown here, the scarce *A. crassifolium* being in bloom, and a fine appearance it

has with a long pendulous spike of plum-coloured flowers. *Cypripedium*, such as *Stonei*, *Veitchi*, and *Spicerianum*, are also grown here; likewise *Dendrobium thysiflorum*, which is evidently a favourite judging by the quantity. The *Vanda* house comes next, and here also one notices at once the comparatively cool atmosphere, so different from the stifling heat and moisture in which *Vandas* are commonly grown. This house is full of fine large specimens, with scarcely a leaf missing, and as green as Leeks. A striking contrast with the bulk of the plants was formed by a few that had recently been brought from a place where they were grown in excessive heat. The leaves of these, what few there were remaining, were quite of a pale greenish yellow, and it would take some years to get them well furnished with green healthy foliage. It is evident from what we have seen here and elsewhere that *Vandas*, and, indeed, other East Indian Orchids, are subjected to too much heat, and this no doubt accounts for the fact of their not being so popular as those Orchids that are generally grown in less heat. There were no *Vandas* in flower at the date these notes were taken, but the collection is known to be exceedingly rich in choice varieties, such as *Paterson's* and the *Chatsworth* variety of *V. tricolor*, the *Dalkeith* form of *V. suavis*, and others. In this house were also *Odontoglossum citrosum* and *Celoglyne Massangeana*, the latter in flower, and an extremely handsome Orchid it is. *Cattleya Sanderiana* was also growing vigorously in this house, and as it seems to grow uncommonly free thus situated the hint may be useful to others.

The cool Orchids have a special house of capacious dimensions to themselves. They are grown by the thousand, particularly such as *Odontoglossum crispum* (*Alexandrae*) and *Pescatorei*. The *Masdevallias*, too, the more showy of them, such as *Harryana*, *Veitchiana*, *Shuttleworthi*, *Davisi*, and others, thrive to perfection in this delightful Tweed valley. W. G.

NOTES BY A WORKING GARDENER.

Hardy flowers—The numerous lists of these that reach one by post show how complete and wide-spread is the interest taken in them; perhaps I ought to say revived interest, as the witnessing of their being kicked out of the garden by the score, if not by hundreds, yearly is just within my recollection in order to make room for bedding out, the fashion for which raged more furiously over the entire country than any other gardening fashion has done since. On reflection one wonders whatever it have been that made people so intent, nay, enthusiastic, on seeing huge beds or masses of *Pelargoniums*, *Verbenas*, and *Calceolarias*, and the best guess that I can make as to why it was is that it was so marked a change—gaity of colouring and uniformity of arrangement in place of the higgledy-piggledy arranged herbaceous beds and borders that at that day, and for years previously, had been called flower gardening, but which were about as great a parody on the name as were their gaudy successors. However, both are now over, for our advances in flower gardening have been so great that it will not be possible to revert to either mode. In fact, I think there will soon be no general mode, but that each garden will strive to maintain its own dignity by its own style, both of planting and variety of plants used. Then, and not till then, will flower gardening have reached its zenith, and the flower gardener self-respect, because independent of others. I do not mean to say that one can ever afford to despise whatever is excellent in a neighbour's or friend's garden, but I do say that to copy him *in toto* is a piece of slavishness that shows plainly our own lack of brains, and also hinders that progress in flower gardening generally that would be sure to accrue were distinctiveness of each garden arrangement constantly kept in view. I have been led to make these remarks through a soliloquy that I have lately had on—I may say with—hardy flowers. The first, that by its present prominence in the borders, to demand attention is

Rudbeckia Newmanni. It can only be described by the word grand. We have plants of it 2 feet through, and which were transplanted as late as January last, and yet each plant is bearing scores of flowers of the purest golden yellow with jet black centres. I feel tempted to christen it a refined miniature *Sunflower*; but there, that would be no honour to it, the flowers being far superior to the handsomest of any *Sunflower*, annual or perennial. There is no better plant of the same colour for grouping *en masse*, or for planting singly, or for use as cut flowers, or more easy of propagation, simple division, or of general culture, as any description of soil that is moderately fertile suits it, and last, but not least, the foliage is very handsome, and the flower-stems so hard that supports are not needed.

Galega officinalis alba.—This has been in flower for more than two months, and is still very gay. The flowers are pure white, not unlike a *Vetch*, but much larger and pure white, and the plant grows 3 feet, and in good soil 4 feet high. It should be afforded plenty of space, and be kept erect by timely staking, but the ties should be loose as possible, else the shaded stems decay quickly; but apart from such injury taking place there are few plants that look more wretched than it does when the stems are bunched closely together. It comes perfectly true from seed, and splits up and transplants well at any time after the stems have died down. Like the preceding, it is excellent for cut-flower purposes. The more common purple variety is not so valuable for this use, or, indeed, for border decoration either.

Lathyrus latifolius albus.—This is an Everlasting *Pea* having the purest white flowers which are as large as the largest flowers of the *Scarlet Runner Bean*, and are borne successively, continuing in good soils to flower for several weeks consecutively. As a plant for varying the monotony all but inevitable in tall lines of plants for the backs of borders, both as to habit and continuity of flowering it is excelled by none, and certainly by few, for cut-flower uses. I have not proved whether it comes true from seed, but the roots spread rapidly, and stock can be increased by division of these. The neatest supports are *Pea sticks*, 4 feet in height, and the plant looks best when planted in solitary clumps at intervals of a few yards throughout the borders.

Chrysocoma Linosyris.—This hardy herbaceous perennial may be described as a tall-growing, yellow-flowered *Ageratum*, and some persons might possibly think it unworthy of cultivation, but any plant that flowers for a long period and in any position, dry, wet, shaded, or open to sunshine, and in almost any description of soil, is surely deserving of cultivation, and such this plant is, for it has now been in flower several weeks and appears likely to continue so indefinitely. It attains an average height of 30 inches, grows perfectly upright, and, though not straggling in growth, it requires staking. It is readily increased by division of the root at the general transplanting season.

Helianthus multiflorus fl.-pl.—This is a double-flowered perennial *Sunflower*, and the most select collection of hardy herbaceous plants would be rendered the more select for its inclusion. I know nothing to equal it in the yellow-flowering way or for cut-flower purposes, as it will keep fresh and nice for a week or more. The plant is a strong grower; we have it nearly 5 feet high. Its habit of growth and appearance seem nearly allied to the *Jerusalem Artichoke*, the stems being hard and the foliage massive and of a bright green colour, and its flowering properties are of the first order, as flowers are produced all up the stems and in great numbers and of various sizes, the finest flowers, as a matter of course, being nearest the top of stems, whilst as to season of flowering, that appears unlimited; certainly it flowers at least six months out of the twelve. It is propagated by division of the roots, and enjoys a rich, deep soil.

Helianthus rigidus is a single form of the perennial *Sunflower*, and is chiefly valuable for

its late-flowering properties. The first flowers opened three weeks ago, and it will continue to flower till severe frost cuts it off. The plant grows very tall, sometimes 6 feet or more, and being rather thin-stemmed, staking is required long before flowering time. The flowers are small—about the size of *Rudbeckia Newmanni*—and are of a light golden colour, with dark, almost black, centres. I first saw this plant growing and flowering most splendidly in the public gardens at Bournemouth (time, end of October, when most other hardy flowers had begun to look washed-out), and I was converted at first sight into determining to have it home with me and give it place amongst our very best perennial plants. I have not grown it from seed, but I should think it would be likely to reproduce itself in that way, though by division of the roots a large stock may soon be had.

Hyacinthus candicans.—Till recently this has not been largely grown. It is one of our best hardy border bulbous plants, and has proved perfectly hardy when left in the ground all the winter. Ours have now been out three winters, and each year they come more strong than before and flower better, and especially give a longer succession of flowers than do annual planted bulbs. The spikes of flower grow a yard long, and occasionally longer, and bear a score or more of bell-shaped, creamy white flowers on each spike. They have now been in flower for at least six weeks, and have not nearly done yet. Last year we gathered ripe seed, which was sown in warmth, and we have now a fine lot of small seedlings, though as to when they will flower, I will not venture to guess, but expect not for a couple of years to come. Flowering bulbs can be bought for 1s. and upwards, according to size. It is one of the most imposing, because uncommon, of all the plants in the mixed borders.

Oenothera Youngi.—This, the best of all the Evening *Primroses*, really seems to be always in flower, but it is certainly now at its best. The plant forms a bush of from 30 inches to 40 inches high, and bears in great profusion flowers of the brightest sulphur-yellow, which are set off to the best advantage by handsome bronzy green foliage. Were I obliged to grow but one plant for yellow flowers, I fancy this would be my choice: first, because of its freedom in flowering; second, good habit of growth; third, its effectiveness as a border plant; and fourth, for its easy culture. Cuttings of young shoots strike quickly in a close frame, and the root splits up well, so that it is not difficult to get a stock of it. The foregoing are the particular plants that have recently, as it were, pushed themselves to the front, but there are at the present time in the borders many other kinds equally good and showy, though more common, amongst them being numerous varieties of *Pentstemon*, *Phlox*, *Pyrethrum*, the variety *uliginosum* being just now in great beauty, and particularly so are all the varieties of Japanese *Anemones*, which deserve to be grown largely in every garden, and will be as their merits become better known.

Mistletoe berries from artificial fertilisation.—Many persons who have *Mistletoe* on their trees see it growing year after year without producing fruits. The reason is not far to seek. The *Mistletoe* is what is technically termed a dioecious plant, that is, it produces its pollen-bearing and seed-bearing organs not only in different flowers, but on different plants. Hence it follows that without at least two plants—a male and a female—the production of fruit is impossible. But it is by no means necessary for both plants to grow in immediate contiguity, for if a bunch of the male or polleniferous flower be brushed against the female ones, so as to ensure the pollen being applied to the stigmas, fruit will set freely. Last spring I obtained some male *Mistletoe* flowers from a friend, and have now a fair lot of berries, although the male plant grew on a *Pear tree* some five miles from my garden. Anyone, therefore, having only female plants should watch when they bloom, and, as pollen is easily got, proceed to fertilise the flowers. They must

be carefully looked for, as they are small, green, and not at all conspicuous.—GREENWOOD.

FRUIT GARDEN.

FOXY GRAPES.

A FOXY colour in Grapes has one great advantage to recommend it should it ever come to be regarded as a mark of excellence, viz., that gardeners have an infallible recipe for producing Grapes of that colour. They have only to introduce red spider or thrips into the vinery, over-crop the Vines, or do anything which tends to injure the foliage or impair the vigour of the plant generally, and perfectly black, well-coloured Grapes will never trouble them, but are just as sure to be associated with good foliage and general good health. Whether good quality is likely to be found as a rule in conjunction with disease and debility and *vice-versa* may be a subject of speculation, but that is an anomaly I should not expect. "Another Scot's" rate of cropping I should say is the cause of the bad colour of his Grapes, and if he only goes on as he is doing, he will have worse evils to record before long. The best growers are satisfied with from one pound to at most two pounds of Grapes to the foot run, but one does not often see the latter, and still seldomer well coloured; but "Another Scot's" Vines, each 12 feet long, carry on an average twenty-one bunches each, or about 52 pounds, rather over four pounds to the foot run, a thing I would rather see than hear tell of, as the rate is simply preposterous, unless the Vines are about 6 feet asunder, with a proportionate quantity of foliage and wood, and then the weight would be extraordinary, for the bunches would touch each other in the line. Then look at the test submitted for opinion. "Another Scot's" Grapes, started a little after the new year and ripened in May, he sends you in September, and others from a succession house only getting ripe with them. Of what good is this? If anyone wishes to taste the difference between red and black Hamburgs, let them take both off the same bunch or off the same Vine, or even off two Vines in the same house, and then judge. I predict if this trial is put into effect, we shall wait many a long day before the editor will praise the red berries at the expense of the black ones. The "First Scot" cites the fact that Hamburgs allowed to hang long after they are ripe, if black to begin with, turn red again at the end, which is quite true, and is a fact worth noting; but when he cites this as an argument in favour of red Grapes being of better quality than black ones, as being associated with more perfect ripeness, the argument fails, because such red Grapes lose flavour as well as colour. By flavour I mean something more than mere sweetness or sugar. Another thing, too, worth noticing is that real well-coloured Grapes, or Grapes that are going to colour well, seldom or never shank. Shankd Grapes are always red, so that the two may be said to be associated. I should not be surprised to find, however, that red Black Hamburgs are thinnest skinned, because they are generally the least fleshy as well, and the two may probably go together, but no one can find much fault with a good Black Hamburg Grape because its skin happens to be of good quality and texture like the rest of it—the difference is barely appreciable. A THIRD SCOT.

GRAPE MILDEWS.

IT appears that there are two of these now—the old enemy (*Oidium Tuckeri*) and the more robust form which has appeared on the Vines at Chiswick, where the fungologists appear to have a faculty for discovering such things. I am not so sure that the latter is so rare on Vines as seems to be supposed, as certain diseases of the foot-stalks of the bunches and the wood that have been chronicled from time to time have a suspicious resemblance to the Chiswick mildew, the evil repute of which I have no desire to under-rate. Several years ago I saw the wood and the foot-stalks of the bunches of Black Alicante affected in the way described at Chiswick, but I mistook it

for the common mildew. It discoloured the foot-stalks and killed them in some cases, causing the berries to drop off, and I could quite conceive of such a plague doing much injury to a crop, because mildew on Vines at this season cannot be so easily counteracted by the usual means as at other times. One cannot apply sulphur to the ripe fruit, and it is of no use sulphuring the pipes unless they can be made very hot at the same time. In the case referred to the parasite did not extend beyond one or two Vines. The "gouty swellings" described by Mr. Worthington Smith are, however, a new feature. Prevention is better than cure, and the maintenance of a buoyant, dry atmosphere will generally keep such plagues at bay. In late vineries a portion of the foliage may now be removed where it is overcrowded to permit a freer circulation of air. As to the common Grape mildew, it is now pretty well ascertained that it seldom or never makes any serious headway on healthy Vines in vineries properly ventilated and heated. The germs of mildew seem to be always floating about, but they only establish themselves on the Vine under certain conditions. I should not be surprised to hear that mildew has been prevalent this year, because very little fire-heat has been used in many places owing to the hot summer, and where plants are kept in the vinery or much moisture spilled, it is in a dank, unheated house under such conditions that mildew will appear. Can it be ascertained if in the large vinery at Chiswick this year any fire-heat has been employed? I think it probable there has not. On the whole, ordinary mildew is not to be feared much, but when it does appear, dryness and a sulphur-laden atmosphere from pipes made hot and continued for a while will prevent it extending and finally conquer it. S. W.

Hardy fruit in Scotland.—Lately on looking round the gardens at Dunkeld we were agreeably surprised at the variety and excellence of the fruit grown in the open air there. It was a pleasure to see on open walls healthy Peach trees bearing fine crops of good fruit. Many will remember how our Peach trees in the midland and southern counties have been murdered on the open wall during the past few years. Even at Goodwood we have known them destroyed in the middle of summer. Plums, Apricots, Peaches, Nectarines were all excellent in this "folded valley" among the Highlands. Great forest trees we did expect to see, but not such excellent fruit-culture as that practised by Mr. Fairgrieve, gardener to the Dowager Duchess of Athole. Mr. Fairgrieve won the first prize for hardy fruit at the late great show at Dundee.

Hybrid Cashmere Melon.—Every year adds to the number of varieties or so-called varieties of Melons, few or none of which remain long popular with any great number of cultivators. At the recent Bath Floral Fête there were upwards of twenty green-fleshed Melons shown in nearly as many varieties, and a much greater percentage than usual were fit to eat. The first prize was won by Mr. A. Miller, of Rood Ashton, Trowbridge, with a handsome fruit of the old Hybrid Cashmere, than which there is no better sort grown. Mr. Taylor, when at Longleat, used to grow this variety to perfection, but it was on the extension system, and this not only because he considered this the best way of securing heavy and successional crops, but also because he considered that it would not bear stopping or severe restriction. It would appear that he is not altogether correct in this opinion, as Mr. Miller, whom he supplied with seeds, has stopped his plants rather severely, and otherwise treated them similarly to various other more robust varieties, and that, too, with the best of results. It is to be hoped that others will give this variety a fair trial next season, either on the restriction or extension systems, as, provided they have the right sort, they can depend upon every fruit properly ripened being superior to any other sort they may have grown. The rich yellow fruits are long, ribbed, and handsome in appearance, the rather white flesh being thick, firm, and very richly flavoured. It is also a

good keeper in this respect, also being superior to any other sort with which I am acquainted.—W. I. M.

The Forge Apple.—Knowing how well this Apple used to thrive in nearly every garden and orchard in the counties of Surrey and Sussex, and that it was a free-bearing and useful culinary fruit, I thought I should like to try it in Somerset. For that purpose I obtained trees from Sussex about eight years ago. I gave them the best soil and position at my command, but they make no progress; they neither grow nor produce any blossoms. They live, but add but little to their height or circumference, yet to all appearance they are perfectly healthy. So far they have defied canker, which has killed other trees planted at the same time. Quite a collection of Apples, consisting of different varieties, was obtained and planted along with them, and these, so far as canker would let them, have grown well and borne fruit, but the behaviour of the Forge puzzles me altogether. Nevertheless, its behaviour is not without some interest. It shows that those who are about to establish fruit plantations should make themselves acquainted with the sorts which do well in the particular locality where the plantation is to be made, and make their selections accordingly. That such advice is sound, and likely to be attended with the best results, my experience with this particular variety evidently proves. I am further supported in this view by the fact that this sort is but very little known outside the counties just named. I cannot attempt to explain why it will not thrive in Somerset; but it is no new experience, for it has long been known that local conditions do exercise great influence on many fruits, and such seems to be the case with the sort under notice.—J. C. C.

Prices of Grapes were never so low as they are at present, viz., from 6d. to 2s. 6d. per lb., and which means that the grower would probably be offered less than 1s. per lb. for good Grapes at the present time. Whether that figure will pay anyone, taking one year with another, only those who grow Grapes for the market can say, but the margin of profit cannot be very large. I remember a grower, who started on a very large scale when Grapes fetched high prices, telling me that he expected 5s. a pound for all he could grow, but that 2s. 6d. would pay him. Since then he has been obliged to part with them at 1s. 6d. I am afraid the tendency of prices will continue downward. In looking at what I thought at first were common Spanish Grapes in a shop the other day I discovered they were Foster's Seedling in apparently fine condition just out of the cork dust. I laid a bunch on the scales, and it weighed close upon 2 lbs. Tasting, however, revealed the fact that the berries were mere bags of water, and entirely inferior to the firm-fleshed Almeria Grapes that have so long been sold in the shops. The merchant told me it was the first lot of the kind he had had, and he would have no more; also that they were from another source than the Almeria Grapes. Still the variety, watery and ill conditioned for keeping as it was, was plump in the berry, although the foot-stalks were quite dead, and I could not help thinking that if the foreigner took to growing such kinds as the Black Hamburg, Muscat and Gros Colmar, and imported them in the same way, the prospects of the home grower were not likely to improve.—J. S. W.

Vegetable food.—A friend sends me a copy of the second edition of a very well arranged and useful little work. Its title is "Explanatory Guide to the Exhibit of Commercial Vegetable Food Supplies, Condiments, Fibres, &c., of the World, also Oil and Honey-yielding Plants." It is published by James Carter & Co., High Holborn, London, and is descriptive of their stand (No. 16) in the International Health Exhibition at South Kensington. This work, however, is much more than a mere catalogue or ordinary guide book, and will be especially useful to all who take an interest in vegetable products generally. Young gardeners especially will not be likely to meet with a work

more useful, or one which they can obtain at a more moderate price. It contains eighty-two pages and an index, and is the best value for a shilling that we have seen for some time.—F. W. B.

KITCHEN GARDEN.

MARKET GARDENING IN SOUTH HANTS.

AFTER the long protracted drought, market gardeners are making every effort to bring up arrears of work in the way of planting, seed sowing &c., as for some weeks past the land has been in such a dust-dry condition, that transplanting, except on a small scale where artificial waterings could be daily applied, was hopeless work; consequently much activity is now needed to get crops planted or sown in time to make anything like an average growth before the dull, dark days of winter come on. As a proof of how dry the soil had become, I need only remark that seed sown in July of several varieties of Cabbage made no attempt to start into growth until the last few days of August. The heat was so intense, and water so scarce, that the only recourse left was to wait until rain came, for if seed is perfectly dry it will keep as well in the soil as out of it, but if enough moisture had been given to cause the seed to germinate without being sufficient to carry on a healthy growth, the tender young plants would have perished. Amongst the operations that are now well advanced I may mention

POTATO DIGGING AND STORING. The early kinds are quite ripe, and have been lifted and stored in excellent condition. As a rule, market growers dig their Potatoes and send them direct to market, but the intense drought that prevailed by delaying the planting of green crops made Potato-lifting one of the few jobs that could be satisfactorily performed. Amongst sorts that have turned out particularly well thus far I may mention Beauty of Hebron, Early Rose, Snowflake, White Elephant, Myatt's Prolific Kidney, and now the vast breadth of Magnum Bonums are fit for use, but few others are asked for in the market. In this locality the crop of Potatoes is of excellent quality, but not so heavy as last season, except on well manured or very good soils. The land cleared of Potatoes is ploughed, harrowed, and planted or sown. The thorough preparation of the soil during the drought has left it clean and friable; seldom have weeds been so thoroughly cleared off as they are at present, and now that the long-looked-for rain has come all hands are busy

PLANTING CABBAGES. In this neighbourhood good Cabbages are always in demand, but have not of late been procurable; thrifty young plants such as growers pride themselves on in ordinary seasons are not obtainable, but any that have been kept alive in the seed beds from the June sowings are now being planted out in rows $1\frac{1}{2}$ feet apart and pretty thick in the rows, for as soon as they have made moderate growth they will be cut or pulled up and tied in bunches. Seed beds for the main spring crop will now be encouraged to grow by stirring the soil with very small hoes, and dusting with soot and wood ashes, that act as a deterrent to slugs and a valuable stimulant as well. They are finally planted after the late crops of Potatoes are lifted.

WINTER ONIONS are being sown in large quantities both for transplanting and for drawing as green Onions for salad. The Giant Rocca, Globe, and Flat Tripoli, and White Spanish are the varieties in most request; they are sown in drills 8 feet apart on well pulverised soil, and rolled down firm, a solid surface producing the best Onion. Giant Rocca and the Tripoli varieties are the sorts mostly used for transplanting, as they grow to a large size early in summer, and the White Spanish, from its mildness, is much esteemed for drawing young, bunches of green Onions being a salading in great request in the early spring and summer months.

TURNIPS are still being sown for the latest crops and for producing Turnip Greens, which in severe winters are a valuable vegetable, for the late-

sown crop seldom gets injured by the weather, and the Turnips produce tops that are much esteemed when other green vegetables are at their lowest ebb. Earlier crops that lived through the drought and severe attacks of Turnip fly are now growing rapidly, and the hoe is being plied amongst them to accelerate growth.

RADISHES are grown in considerable quantities by many market growers, a rich friable soil and plenty of moisture being the conditions to ensure good Radishes. The Turnip-rooted varieties, the China Rose Radish, and the Black Spanish are the sorts most largely used for winter crops in this part.

LETTUCES AND ENDIVE are being planted and sown in quantity, some still adhering to the practice of transplanting, while others sow thinly in drills or broadcast, and allow them to grow to full size. The Black-seeded Brown Cos and several Cabbage varieties of Lettuce are sown at this date, the most popular being Hardy Hammersmith, Grand Admiral, and All the Year Round. Of Endive, the Green Curled and Batavian are the favourite market kinds, being hardier than the Moss Curled, that is grown largely in garden culture.

CELERY now needs frequent attention in the matter of earthing, for with longer and cooler nights and more moisture it is growing freely. Williams' Matchless Red is a favourite market kind, as it lasts in good condition longer than the white varieties.

VEGETABLE MARROWS AND RIDGE CUCUMBERS have been doing good service during the drought, for on a bed of manure they grow and bear freely when other crops fail. The long white and green striped Marrows are more grown than the Custard Marrow as a market crop.

SCARLET RUNNERS, especially late-sown crops, are bearing freely and realising high prices, for the dwarf varieties and early-sown runners were soon over, owing to intense heat, but late-sown crops are now doing well.

FRUIT.—Apples now claim most attention, as other fruits are very variable this year. Crops of Apples are fairly good this year, but they are dropping from the trees prematurely, being much worm-eaten, so that growers are gathering and sending to market all the sorts that are fit for culinary or dessert purposes, and sending direct from the tree before foreign Apples come in is the favourite system here. Plums and Damsons are very scarce and realise high prices. Pears, both for dessert and culinary use, are a variable crop; good samples sell freely. Blackberries are largely sent to market from this locality by country market gardeners, who collect them from the cottagers in the locality of waste and common lands; they are retailed at about 6d. per quart, and for making tarts either alone or mixed with Apples, Mulberries and other autumn fruits are much esteemed by townsfolk; they are very plentiful this year.

Gosport, Hants.

J. GROOM.

Autumn Giant Broccoli.—This is rightly named, for when well grown it is a giant amongst autumn Broccoli, but whether it is any better for being so large is an open question. Huge specimens, I apprehend, are not wanted. I much prefer its near neighbour, the Cauliflower of the same name, when it is grown rather close together, so as to produce heads about the size of a breakfast-cup. However, those who require larger heads for the month of October should sow this Broccoli in April and plant it in good ground; it will then be all that can be desired.—J. C. C.

Inodorous manures.—With regard to dry or patent manures, the fact that some may have a strong perfume is no proof that such are stronger or more potent than those which are inodorous. It is rather a proof of imperfect manufacture, because ammonia is being eliminated or wasted. Now we find lime to be absolutely inodorous, and yet a valuable manure. Soot is also comparatively inodorous, and absolutely so are salt and gypsum, yet all three are first class manures—probably relative to price the very cheapest and best. Wood

ashes, because containing phosphates, make excellent manure, and are most inoffensive. So also are bones; indeed, it is chiefly when these lie in bulk and heat, so as to eliminate ammonia, that they smell badly. The very best Potato manure is absolutely inodorous, and yet it will beat in productiveness of crop the most offensive of other patent manures.—D.

Rousham Park Hero Onion.—A collection of about fifty bulbs of this very fine Onion attracted considerable attention at the recent horticultural show at Dundee. It is a very fine type of the White Spanish, and originated at Rousham Park, Oxfordshire. The bulbs shown on this occasion had been specially grown, but they showed what can be done with this Onion under superior cultivation. They were very large, solid, and symmetrical, and averaged about 1 lb. each.—R. D.

Nisbet's Victoria Tomato.—This Tomato can be highly recommended for indoor work, both as regards flavour and cropping. The individual fruits are small, but I should imagine a greater weight can be taken from a single plant of this than from one of any other variety. Ten, eleven, and even twelve dozen fruits have been taken from single plants in Seakale pots; the colour is good, and (what would doubtless make it acceptable to many palates) it is considerably milder than the larger varieties. It does not succeed so well with me in the open as indoors, the skin being so thin that it readily cracks.—E. B.

Potatoes.—I see that "W. I. M." in last week's GARDEN confirms my experience with regard to Cosmopolitan, and, despite its exceptionally fine flavour, does not intend growing it again. It would be interesting to have some comments on the best known varieties of Potato from all parts of the kingdom and in every description of soil, as it is evident that every locality has its favourite kind, and that no hard-and-fast rule can be followed as regards the selection of the best sorts. For instance, although my experience tallies with that of "W. I. M." with respect to Cosmopolitan, it fails to do so in the case of Schoolmaster, which is one of our very best Potatoes. What is the Potato of the future? I am inclined to think that it will be White Elephant. In districts as far apart as Devon and Surrey it is fast taking the place of Magnum Bonum. It can be thoroughly recommended for its fine flavour and great productiveness; indeed, on a light, well-worked soil it is about as heavy a cropper as we have, several individual tubers turning the scale this year at $1\frac{1}{2}$ lbs. It has also the merit of being fit for table much earlier than most of the extra-sized varieties. This season, for instance, it is ready with Covent Garden and Beauty of Hebron. The heaviest cropper that we have is Idaho, but I am unable to say anything as to its flavour. It would, however, be a welcome addition to collections where bulk and not quality was required. The tubers are of extraordinary size and very free from disease.—E. B.

Remedies for adder bites.—Adder bites seem to have been more common than usual this year and the poison more powerful, probably owing to the great heat. My attention was painfully drawn to this subject through my son, when out with a well-known naturalist near our river at Wisley, being bitten in the hand. Within half an hour he could not walk, and could hardly speak. Ammonia externally and brandy internally were applied, but not for some little time; so the poison got fully into his system. He was very ill, suffered greatly for some days, and did not recover his strength for many weeks. If a strong young man in the fullest health (he had just returned from a Highland fishing run) could be made so ill, such a bite must, I think, have been fatal to a weaker subject. The adder was a very large one. This accident brought me communications from friends all over the country; from them I gather that, if bitten at a distance from medical aid, the proper course is to tie a ligature above the wound, then cut off the skin (it is apt to close over the puncture), and, if the lips are uncracked, suck the

place; then rub ammonia over it and take brandy from time to time; and, as the remedies should be applied at once, it is desirable to have them near when in places frequented by adders. The patient should on no account be allowed to go to sleep. The popular country remedy is adder's fat, but this, I conceive, can have no action different from olive or other sweet oil. Quite lately a navy employed on the new Guildford Railway was bitten. I am informed that he was taken to the hospital, but died in a few days.—G. F. WILSON, *Heatherbank, Weybridge.*

TREES AND SHRUBS.

BLUE HYDRANGEAS.

I HAVE changed the colour of the ordinary pink Hydrangea to blue by special treatment. In some soils this happens naturally. Here outside growing in the shrubberies they are always of a deep pink, their natural colour. The soil in this locality is of a strong retentive character resting on clay and chalk. Blue Hydrangeas are useful for house decoration, for standing in single vases, or for mixing with other plants in the conservatory; they are showy and interesting, their colour contrasting well with the other pink and white varieties of Hydrangea. Some we grow with a single stem; others bear four or six trusses or more as the case may be, and we find all useful. The way in which we manage to get them blue is as follows: When the plants have done blooming, we prune them down to within two or three eyes on each stem. They are then placed out-of-doors, and as soon as they commence to grow they are taken out of the pots, all the old soil is shaken off them, and the largest roots are shortened back. The plants are then placed in 6-inch pots, more or less according to their size, in the following compost, viz., fibry loam three parts, leaf soil one part, half a part of bone meal, with some charcoal and silver sand. To every bushel of the prepared soil we add a quarter pound of sulphate of iron, first crushing it into a powder, and mixing all thoroughly well together. We then pot firmly, and place the plants in a cold frame until they commence to root, when they are moved outside, where they remain until the end of October. Any position in the houses during the winter free from frost will suit them. At this stage they should not be kept too wet, just enough water being given to make the soil moist. In February some of the plants may be placed in heat—i.e., if required early; a position in the greenhouse near the glass will suit them perfectly. As soon as the pots are well filled with roots and the plants are growing freely, and before the trusses show themselves, they must be watered with alum water at the rate of one teaspoonful of powdered alum to a quart of water. This should be given at every alternate watering, and it may be slightly increased in strength after the lapse of about a fortnight. The other watering may consist of liquid manure in a weak state. The plants should also be syringed overhead daily in the afternoon in fine weather with clear water. They should never be allowed to become dry at the root or the lower leaves will turn yellow and drop off, a circumstance which spoils the beauty of the plants.

E. MOLYNEUX.

Swanmore Park, Bishop's Waltham, Hants.

IRONSTONE SOILS.

THE well-being of some plants doubtless depends largely on the presence of iron in the soil, as stated in THE GARDEN (p. 244), Rhododendrons being named particularly. This district is on the coal and ironstone, which are usually united, and vast quantities of both minerals are raised in the district every year. As a rule, all over the locality the top soil is shallow, and the subsoil consists of a yellowish rag or loose rock largely impregnated with iron. In this poor material, among which, in many places, nothing that can be called "soil" exists, and below which lie the coal and ironstone seams at various depths, just according to the "lie" of the measures, a great

many trees and shrubs grow extremely well. Rhododendrons I cannot say penetrate far into it, but their roots are on it and in it, and the bushes grow to a large size, are long lived, flower well, and seed. Timber trees, like the Spanish Chestnut, Oak, Ash, Sycamore, Elm, wild Cherry, Birch, Beech, and forest trees generally, that send their roots down deep, thrive well in this rag, and draw their main supplies from it. Larch does well, but Spruces fail. Most Conifers, however, grow pretty fairly if sheltered, but their roots are generally confined to the surface soil. With regard to the other deciduous trees mentioned, however, I have been surprised to notice the depths to which the roots descend. In shafts that have been sunk and in wells I have found many roots penetrating the crevices of the rock in every direction to a depth of 10 feet or 12 feet, and quite healthy. I have also several times seen worms unearthed at that depth in sinking for water. One of the largest and healthiest Spanish Chestnuts in the country probably for its age here is, I suppose, growing in this rock alone. There is scarcely any soil on the surface, and I know that the rag is deep below where the roots are. What is more, the most vigorous, oldest, and most fertile Pear trees on the place have their main roots down in this same rag, and have not been root-pruned or lifted for probably thirty years. In one of our best vineries the roots are in undisturbed possession of the same soil, but where they are there is a rather deeper layer of loam on the surface of the same character and colour as the subsoil. The vigour and weight of crop which these Vines have carried annually for twenty years without a miss have been remarkable. Curious to relate, however, whenever this yellow and stony subsoil is turned up to the surface corn and vegetable crops refuse to do well in it until it is ameliorated with dressings of mould and mixed intimately with the surface soil, when all crops thrive better than previously. Apart from the action of iron itself upon plants, there is nothing surprising in plants growing more or less on the ironstone, because it contains in itself most of the elements on which plants subsist. J. S.

Californian conifer forests.—I see it stated in THE GARDEN (p. 246) that the Abies Douglasi and Pinus Lambertiana attain the dimensions of 300 feet in height and 20 feet in diameter. Is not this an error? I have measured most of the large trees in California, and could not find a Sugar Pine of more than 12 feet in diameter, and was told that the highest tree of this species was 250 feet. The Douglas Fir does not even grow to this size, 10 feet being the diameter of the largest, and about 250 feet the highest. I may mention that it is the exception to find a Pinus Lambertiana 12 feet in diameter; 10 feet is large for a tree of this kind.—GEO. A. PASSINGHAM, *Milton, Cambridge.*

Hemlock Spruce.—One of the features of cheerful paradise-like Greenwood are the numerous low hedges which bound many of the burial lots in that cemetery. Arbor-vitæ, Box, Yew, Juniper, and Spruce are chiefly the plants used, and in my opinion the Hemlock Spruce (*Tsuga canadensis*) formed the most ornamental hedges. As there seen by me last July they were dense and dark—they had been but recently clipped—and from their sides sprang numerous limp-tipped twigs of a pale green, presenting a pleasing and decided contrast to the neighbouring Arbor-vitæ hedges. The gravest objection to the Canadian Hemlock as an ornamental hedge plant for Britain is its rather slow growth, but its Pacific coast ally is structurally and in habit so much like it, and yet so much more rapid in growth, that for this purpose it might form an excellent substitute.—GEO. SYME.

5246.—**Wasps attacking Elms.**—Mr. Harry Verney, Claydon, Bucks, would, I think, find for his Elm trees a certain remedy against the destructiveness of wasps in digging into the bark of the trees if he applied as a dressing a mixture of paraffin oil and soot, and if he applied this, say about January next, I think he would

find that no wasps would touch them again, and the trees would further be benefited by the fact that various insects and parasitic growths would be destroyed that formerly derived nourishment from the trees. I can testify to this dressing being very successful, as my father had sixteen acres of fruit trees dressed with the dressing (stems only) with very satisfactory results. Nine acres of the trees are twelve years old, and seven two years old. Some would think the remedy a strong one, especially for young trees, but our younger trees, especially the Plums, are particularly vigorous.—JOSEPH B. WILKIN.

Prunus Pissardi.—Besides what has been at different times published in THE GARDEN, and what is already known about this new tree, allow me to add that it may be considered as a fruit tree as well as an ornamental one. It belongs, according to the *Revue Horticole*, to the tribe of Myrobalans; its fruits are in diameter a little larger than a two-shilling-piece, and their maturation takes place about August. They are quite round in shape, are of a peculiar metallic colour, and they possess a very sweet flavour, slightly acidulated. Another excellent point in their favour is that they are quite proof against the high winds, which are so injurious to many fruit trees on account of their peduncles being very strongly fixed. I have been shown in M. Carrière's garden the two original trees which were imported from Persia by M. Pissard, whose name they bear. They have been grafted on stems of about 5 feet high, and are now altogether nearly 10 feet in height. The heads are round, bushy, and well filled with branches. In an ordinary garden soil they have grown very fast; exposed to the full rays of the sun, their tinge of colour accordingly is beautiful. Considering how scarce red-coloured foliage is amongst trees, I may say that this new Plum will be of great service to the landscape gardener as well as one of the best shrubs lately introduced.—J. SALLIER.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 258.)

NOTHOCHLENA PARRYI.—This is one of the most distinct of all the North American species and belonging to the same group of woolly kinds which comprises *N. Newberryi*, *lanuginosa*, and *Marantæ*. It is found in its natural state growing in dense tufts in very dry and exposed places among rocks in Utah, where it often has to endure long-continued drought and also a great amount of heat. It is also found at Arizona, in the valley of Colorado, in California, San Diego, &c. It is a Fern of small dimensions, and the general colour of its lovely fronds is greenish white above and rusty white beneath, due to the heavy covering of slender pointed hairs which cover both surfaces, but the lower one more thickly than the upper. Another peculiarity belonging to this little gem is that the pinnae are twice pinnate, the pinnules being set very close together and scarcely visible through the woolly covering; when denuded of this they are found to be very small, roundish, ovate, and crenate. The upper ones are less distinct, and the uppermost are even confluent with the terminal segment. Although their outer margin is slightly recurved, it is never sufficiently so to cover the very dark-coloured sporangia, which are placed three or four together, forming a ring of about twenty joints. There is also another feature noticeable, and that is where the pinnae have fallen from the rachis or the fronds from the stalks, they remain on the root-stock for a year or more before they fall off or decay. This interesting species only requires greenhouse temperature.

Rootstock short, tufted, thickly covered with entire chaffy blackish scales. Fronds about 5 inches long, oblong-lanceolate, tripinnate, and borne on clustered, slender stalks of equal length; these are dark brown or blackish, minutely striated and hirsute with articulated whitish hairs; lower pinnae distant, ovate, a little shorter and broader than the middle ones. Sporangia very dark and projecting beyond the margin of the segments on which they are situated.

N. RUFA.—An interesting and thoroughly evergreen species native of Mexico, Peru, Chili, Bolivia, where it is found growing on rocks in very exposed situations. It is, of all American kinds, the one which possesses the greatest similarity of appearance to the few species found in the south of Europe, Madeira, &c., but it possesses a constitution altogether more vigorous than theirs. Its habit is also more elegant, as its fronds, which are produced in great abundance, instead of being rigid, like those of either *N. lanuginosa* or *Marantæ*, are naturally arching, which renders this species specially fitted for growing in hanging baskets. Thus situated, the beautiful colour of the underside of its pinnae, white when in a young state, afterwards of a light or dark brown colour, according to their stage of maturation, is shown off to advantage. This species simply requires greenhouse temperature, but great care must be taken to keep the foliage perfectly dry at all times of the year.

Fronds from 10 inches to 15 inches long, pinnate, lanceolate-ovate in shape, and borne on round, downy stalks of about equal length and rising from a short, thick rootstock densely covered with light brown scales and which require to be kept well above the surface of the soil. Pinnae pinnatifid, obtuse, and of very leathery nature, light green on their upper surface and clothed underneath with woolly scales through which the sori, although plentiful, can scarcely be discerned round their edges.

N. SINUATA.—A beautiful South American Fern found on rocks and much exposed to the sun in Peru, Chili, and Mexico, where it is said to grow on limestone, trachyte, and conglomerate, in crevices of lava and on walls, and is reported as luxuriating in a vertical range from 2000 feet to 7000 feet above the sea, this elevation subjecting it to very different temperatures. It is also a native of Texas and New Mexico. It makes, however, a much handsomer plant when cultivated in heat than when kept in a cold house. Its real place is the stove, or, at least, the intermediate house, and on account of the length of its gracefully pendulous fronds, it should be grown, if possible, in a hanging basket—really the only way to show off to advantage its lovely fronds, which, exclusive of the stalks, often measure from 18 inches to 24 inches in length. The pinnae, which in the small fronds are roundish and slightly crenated, but which in larger fronds are more ovate and have sinuated margins, number from twenty to thirty on each side of the rachis. The stalks are provided with a peculiarly deciduous covering of very delicate lanceolate scales, consisting of two kinds intermixed. The larger ones are but slightly ciliated, but the smaller ones are very deeply and elegantly ciliated. The upper surface of the pinnae bears scattered stellate scales of a silvery hue on a glaucous ground, while the underside is thickly clothed with imbricated, lanceolate, and ciliated scales, silvery in their young state, but turning with age to a light brown colour.

Fronds long, narrow, pendulous, oblong-linear in shape, and simply pinnate, borne on short, round, and wiry stalks of a bright reddish brown colour, and covered at the base, when young at least, with ciliated scales. These are produced from a short and thick rootstock, very chafy with ferruginous scales, and which is peculiarly swollen in places into bulbiform knobs as large as a good-sized pea.

N. SQUAMATA.—This, also a species native of the same habitats as that just described, is somewhat similar in character, though of much dwarfer and more rigid habit. Indeed, although its fronds, which are of short stature and very leathery, are simply pinnate, and the pinnae closely set and smooth-edged instead of being pinnatifid, it almost looks like a diminutive form of *N. rufo*, seldom exceeding 6 inches in height. This character, which is quite constant in plants of this Fern under cultivation, may possibly have been imparted to it in a wild state by its naturally growing at higher elevations than *N. rufo*, a circumstance which would certainly tend to dwarf its dimensions. Owing to its small size it is of course useless as a basket plant, but otherwise it requires the same treatment as the species above described.

N. TENERA.—A very pretty South American evergreen species found growing naturally in Chili, Bolivia, and Peru, and also in Southern Utah. Its predilection for crevices of perpendicular rocks at a high altitude accounts for the

difficulties generally encountered in its culture when, as is nearly always the case, it is subjected to warm treatment. A greenhouse temperature is all that is required in order to grow successfully this little gem, which is readily distinguished from all other species by the tender texture of its pinnae. The latter are peculiarly fleshy, and have both surfaces perfectly smooth and of a pale and somewhat glaucous colour. Another character peculiar to this plant is that the stalks and rachis are wiry, dark brown or almost black, smooth and shining, though deprived of the polish particular to the stalks of most *Adiantums*, and the lowest portion of their branchlets remain long after the pinnae have fallen off, so that the living fronds, which are triangular-ovate in outline, are surrounded by a bristling mass of stalks. This species is allied to *N. nivea*, from which it differs in having no powder on the underside of the fronds.

Fronds sometimes simply pinnate, but bipinnate in large specimens, about 4 inches high, and borne on tufted, brittle, smooth stalks, which rise from a short, erect rootstock, chafy with narrow, ferruginous scales. Pinnae numerous, though rather distant, the lowest pair usually larger than any other and divided into five or six ovate or sub-cordate little pinnules, which are covered nearly all over with dark brown sporangia; they are mostly opposite, smooth, and naked on both surfaces, contrary to all other known species.

N. TRICHOMANOIDES.—This is undoubtedly one of the handsomest among rare species generally met with in good collections, and one which, when well grown and in good condition, never fails to attract attention. The particularly decorative and drooping habit of its long narrow fronds, the peculiar white colour of their underside, due to a combination of white stellate scales and fine farinose powder intermixed, render this plant one of the most striking in the genus. As a plant for a medium-sized hanging basket it has few equals, as its lovely fronds, produced in great abundance from an underground rhizome, are most lightly and elegantly pendulous, a valuable character which is certainly not shared by all species alike and in a similar degree. It is one which requires to be strictly grown in a light compost, using nothing else but either good fibrous peat or leaf mould and silver sand. Though it grows very well in the stove, it is very apt to get trippy, in which case not only the appearance, but also the constitution of the plant is soon destroyed. We find that the intermediate house is the place where it thrives best, and where its fronds last the longest on the plant, provided they are kept perfectly dry at all times of the year.

Fronds numerous, forming thick tufts and produced from underground rhizomes; they seldom exceed 15 inches long by about 1½ inches in width, and are pinnate with pinnae mostly opposite, closely set, somewhat ovate in shape, and toothed at the edges. Their upper surface is of a dark green colour, forming a striking contrast with their underside, which besides being of a bright white colour is belted all round the margin with an even and uninterrupted band of black sori very conspicuous and ornamental.

PELLEA.

Trichomanes floribundum.—Amongst the additions recently made to the Kew collection of Filmy Ferns is a plant of the large form of this, one of the most distinct of the genus *Trichomanes*. The fronds, which are erect, and spring from a stout creeping rhizome, are 1½ feet high, and nearly 12 inches across the broadest part. The pinnae are one-third of an inch broad and over 5 inches in length, pale green, and almost transparent, the margin being prettily fringed with the urn-like spore-cases or "flowers." British Guiana has furnished this specimen along with other fine plants of rare and beautiful Filmy Ferns. The removal of the larger portion of the Kew collection of these plants to a house of a lower temperature than that in which they had hitherto been kept has been productive of excellent results, both as to the health of the plants, and, though less important, still a point to be considered, the better display of the collection, it being now possible for visitors to examine the plants without any difficulty or inconvenience. Some of the kinds have improved wonderfully under the cooler treatment, considering how short a time they have been removed from the tropical house, and allowing for the check which the

change must have given them. The delicate beauty of the majority of these plants, their love of excessive moisture and shade, and the remarkable ease with which they may be grown in small houses or Wardian cases are in favour of their becoming much more popular, at least with the amateur cultivator, than they have hitherto been. It needs but a glimpse at the success met with by Mr. Cooper Foster, who in a small house and several window cases has for years kept a large collection of these plants in splendid health, to ensure for Filmy Ferns a prominent place amongst window-garden plants. A large plant has just been added, and the name *Kaufussi* proves to be wrong.—B.

GARDEN FLORA.

PLATE 459.

ODONTOGLOSSUM ELEGANS.*

YOU may call this plant a very heavily blotched form of *O. cirrhosum*, or you can believe, with some good judges of Orchids, that it is a natural hybrid between *O. cirrhosum* and *O. cristatum*. It first appeared some years ago; in 1878 or 1879 it was, I think, in the Veitchian collection at Chelsea among a batch of *O. cirrhosum* which had arrived from Ecuador some time previously. No matter whether a hybrid or a mere seminal variety, it is none the less a very beautiful plant when seen at its best, the rich chocolate-coloured markings on a creamy white ground being very effective. But our coloured illustration shows all details of form and colour so well that there is no necessity to describe them; indeed, it is to do away with the need of wordy descriptions that our drawings are made. Our artist's sketch was prepared from a plant in Mr. Sander's collection, and we hope that the collection at St. Albans has many individuals of this variety, seeing that it is so tempting in colour and hitherto so rare. This species was originally described in the *Gardeners' Chronicle* for 1879, p. 426, and a coloured figure was given at p. 111 of the "Orchid Album," from a plant in Mr. Pollett's collection at Bickley, in Kent, the county of Hops and Cherries, and altogether a fruitful and pleasant land, which genial old Tasser, the author of the "Five Hundred Points in Good Husbandry," particularly admired.

ODONTOGLOSSUM ELEGANS is a plant well worthy of all due appreciation, and I wish I felt quite sure that many individuals of it exist in the St. Albans repository. It is a robust grower, the plump pseudo-bulbs and bronze-tinted foliage of our portrait to wit, and those who have bought largely of unbloomed *O. cirrhosum* in an imported state should keep a sharp look-out for such a welcome stranger as this species undoubtedly is sure to prove.

F. W. B.

Umbilicus ramosissimus.—This species was introduced to this country from China two or three years ago by Bretschneider. In general appearance it is not unlike *U. spinosus*, commonly grown in gardens, but it is a much freer and more beautiful flowering plant and a decided acquisition to garden Stonerops. It forms a dense, compact rosette of slightly incurved spiny leaves, the basal ones, about a dozen in number, being much larger and more succulent than the others. Branching from the base, the central flowering stem rises about 9 inches in height, and the others which encircle it about 6 inches. The stems are leafy and from the base, of the leaves the flowers are produced; they are bright pink with pretty crimson anthers, and measure over half an inch in diameter. September and October are the flower-

* Drawn in Messrs. F. Sander & Co.'s Orchid nursery, St. Albans, May 15.



ing months, and although an annual or biennial it produces seed so freely that no trouble is experienced in keeping it from year to year. For furnishing dry stony places or old walls or the rockery it is very useful, the more so as it is utterly careless regarding a supply of water. Plants of it that do not flower the first year stand our winters easily, provided they are kept dry.—K.

SEASONABLE WORK.

FLOWER GARDEN.

RETROSPECTIVE NOTES.—The flower of the season has undoubtedly been the Marguerites, golden and white. We have them in large baskets, vases, intermixed with various kinds of plants, such as Heliotropes, Fuchsias, scented Pelargoniums, and Petunias, and also arranged in a long border as a back line, alternated with the Cactus and other single Dahlias, and the effect is strikingly pretty. The white Marguerite and deep purple-crimson Petunia Spitfire intermixed is another excellent hit, and so is the yellow Marguerites and single Dahlia coccinea, raised from seed in February, and the Marguerites from cuttings at the same time. Next to the Marguerites come the single Dahlias; the ease with which they can be raised and the great variety of colours aid in making them popular. We have circular beds of them, arranged as follows: In the centre, Paragon, deep maroon-crimson, with light purple stripes on each side of the petal; next, the Cactus Dahlia (Juarez), the outer line being alba, pure white, and coccinea, bright scarlet, the undergrowth Harrison's Musk, and the edging silver variegated Thyme. The yellow or lutea types of single Dahlias look charming alternated with Ricinus Gibsoni, kept at a height proportionate to the Dahlias by an occasional stopping of the leading shoots. Another noteworthy bed—but only pretty in the eyes of enthusiastic disciples of the æsthetic school—is composed of tall Sunflowers and Giant Hemp, the greenery of this latter plant setting off to advantage the gaudy Sunflower. For a sheltered nook in a distant part of the sub-tropical garden, or rather as seen from a distance, this combination is really excellent, but a far more pleasing arrangement for the same kind of garden we have in the form of an oval-shaped bed, planted in a mixed way with tall variegated Abutilons and Grevillea robusta, the edging being Salvia argentea. Amongst dwarfier plants really acquisitions are the new Violas, Mrs. Grey, almost pure white, and another variety named Yellow Dwarf; both have flowered continuously on our dry soil without more than the ordinary amount of watering all summer, and are still covered with flowers. Tuberous Begonias are also amongst our best flowering bedding plants of the year; at the present moment they quite excel the Pelargoniums in brilliancy, and no rain storms hurt them. We have beds of them intermixed with the variety castanifolia, which is one of the best of the non-tuberous bedding kinds there is. These Begonia beds have an outer margin or narrow border planted with succulents and hardy Sedums in formal pattern, types of plants that harmonise most perfectly with the inmates of the beds. We have also used them as central plants in small panels or rings, some of which are carpeted with Sedum acre elegans, others with Sedum glaucum and Herniaria glabra, and the effect is quite unique, there being such a natural look about the arrangement, and what in our case is of great importance, the groundwork being hardy, there is so much the less to do at the season when we have to turn our summer into a winter garden. In such borders we have simply to lift the Begonias and replace them with small shrubs. These are a few of the most noteworthy arrangements, and plants that have come under our observation this season, our experience of them being such that we shall not only hope to repeat them another year, but extend them.

GENERAL WORK.—Till the leaves are down and cold weather has set in, which will keep worms from coming to the surface, daily sweeping up

and rolling of turf and walks will be needed. Edgings should have their final clipping for the season, and if the walks are now well cleared of weeds, they will entail no further trouble in that respect till spring. Still keep beds and borders in neat condition by repeatedly picking them over, and when all hope of further effectiveness is ended for this year, let them be at once re-occupied with plants to stand the winter, or, in the case of herbaceous plants, clear away the unsightly stems, mulch the borders with Cocoa fibre, and fill up vacancies by planting out from the seed beds such biennials as Canterbury Bells, Sweet Williams, Wallflowers, Snapdragons, and spring-flowering bulbs, such as Hyacinths, Narcissi, and Tulips. Roses are still flowering profusely, the late heavy rains having given them a fresh start; old blossoms should be kept picked off, the beds freed from weeds, and standards secured to stakes. The ties of all that were budded this season ought now to be removed and all Brier shoots and suckers rubbed off. Secure all bedding plants that have been propagated in the open border by potting them up and placing them in frames; also mark, by tying on them pieces of matting or labels, all Dahlias and other plants that are to be saved, and which the first sharp frost would cripple beyond recognition.

FRUIT.

HARDY FRUITS.—Take advantage of the fine dry days which we are now having for gathering Apples and Pears as they become fit for removal from the trees. Choice Pears that are to be kept for a long time should be handled with the greatest care, and none but those which are of full size and sound should be placed on the shelves where they are intended to remain until fit for use. As many of the trees, owing to the lightness of the crop, have made strong growth, and the ground is now in good order, immediate attention must be directed to root pruning, otherwise the full advantage which may be derived from the judicious performance of this operation will be lost. Wall trees of all kinds, commencing with Apricots, early kinds of Peaches and Nectarines, if root pruned with care now will fruit abundantly next year, and the fruit will attain its full size and quality, as the new roots will have time to take a hold of the fresh soil before the leaves fall and the earth loses the warmth so essential to the formation of fresh rootlets. But amateurs and others who have not seen this operation skillfully performed must not suppose that root pruning means a general cutting away of all the roots which extend beyond a certain line and then filling the trench in again. The proper way is to open out a trench at the extremity of the principal roots, and then with steel forks to work inwards until a goodly number of the strongest roots have been traced to within a reasonable distance below the surface of the border. These will then require slightly cutting back with a sharp knife, and the work of relaying in fresh loam, which must be made very firm by ramming, will follow as the trench is filled in again. If the old compost is really good, a small quantity of fresh loam will suffice, and the addition of manure, as a mulching only, will complete the operation. Where the formation of new orchards is contemplated, thorough draining must precede all other operations. Trenching as deep as the soil will allow will then follow, and the time of planting will be regulated by the soil. Free, friable loams may be planted at once, but cold, heavy soils often require turning over a second time and full exposure to the action of frost before they are fit for the reception of the trees. Soils of this description may be greatly improved by the addition of burnt earth or garden refuse, road scrapings, or old lime rubble, and in some cases it may be necessary to crop with Potatoes or other vegetables for a year before the trees are permanently planted. The latter may, however, be grown on in nursery lines, when all doubtful or defective trees will be detected before the final arrangement takes place.

MELONS.—Now is the time to apply artificial bottom-heat to the late Melons (if in pots) by

means of fermenting material and hot-water pipes combined; but if planted out on hills, fire-heat only can be used, and more water and atmospheric moisture will, as a matter of course, be required to counteract its drying influence. Early morning, after this time, should always be devoted to watering, for, much as the Melon rejoices in plentiful supplies of warm, stimulating liquid, it is impatient of stagnant moisture about its stems and leaves after the house is closed for the night. Regulate the foliage, and keep it thinly placed to admit of a free circulation of dry, warm air when solar influences favour ventilation, and, most important of all, wage incessant war with insect pests before they have time to gain a footing, as good quality cannot be expected where the leaves ripen in advance of the fruit. Keep plants in pits and frames as dry and warm as possible by means of fresh linings, by judicious thinning of the soft lateral growths, and by the use of a good covering at night.

CUCUMBERS.—The August-sown plants will now be in a fit state for bearing a few Cucumbers if wanted, but if not required, the removal of all male and female blossoms for some time longer will give increased strength and better prepare them for giving a full supply when the plants in pits and frames are no longer profitable. Where former directions have been followed and plants in pots or boxes are placed on pedestals, thoroughly worked fermenting materials, consisting of Oak leaves and short stable manure, will now play an important part in keeping up a genial bottom-heat in every way preferable to that obtained from hot-water pipes, as the ammonia given off by the manure is obnoxious to insects, and the constant presence of atmospheric moisture reduces syringing to a minimum. In compact, efficiently heated pits many prefer planting out on hills or ridges, and, provided the compost used is not too rich, very satisfactory results are obtained; but great caution in this matter is needed, otherwise the growth of vine and leaf will become too strong at the outset, and a check will follow at a time when the absence of sun and light is most unfavourable to winter culture. In the arrangement of the plants an effort should be made to keep the stems well away from the top-heat pipes, as it is at this part of the house where spider first puts in an appearance, and the hot steam generated by constant syringing often increases the evil by scalding or making the foliage too tender to withstand the attacks of the enemy. Young plants may still be raised from cuttings or seeds for fruiting in February and March, a time at which good fruit is never too plentiful. To succeed with these, light rich turf, medium-sized pots, and good drainage are essential. Bottom-heat may be secured from tan until new Oak leaves can be obtained, or from tan and hot-water pipes combined. A position near the glass is also important. Cleanliness in every part of the pit and good covering in severe weather cannot be too strictly enforced, as many start right and fail through inattention to details.

ORCHARD HOUSES.—By this time pot trees of all kinds that have been kept under glass will be clear of fruit, and the latest batch will be fit for potting. A few years ago no one thought of disturbing the roots of a deciduous fruit tree until it had cast all its leaves, but it is now generally admitted that the best results follow potting immediately after the fruit is gathered. The after-treatment is, of course, different, as trees which are potted before they go to rest require the shelter of an orchard house where they can be syringed occasionally until the wood is ripe, when the best place they can occupy is a sheltered situation out-of-doors. Here they should be placed, not too close together, with the pots fully exposed to the atmosphere until bad weather threatens, when they may be well packed with dry Fern to secure the pots and roots from frost through the winter. Shelter from rain is quite unnecessary, as pot trees suffer more from drought than they do from moisture. In course of time trees become too large for the house, and require shortening back considerably. When this is the

case autumn is the best time to use the knife, and the pruning should always succeed the reducing and repotting. Trees of ordinary size, which have been kept properly pinched throughout the summer, require very little pruning, and on no account should the shoots be shortened back until the triple buds can be distinguished. If maiden trees for potting have not been selected no time should be lost in looking them out, as first comers generally take the best, but it is not always advisable to take the strongest, unless the wood is thoroughly ripe and the young shoots are evenly balanced.

STRAWBERRIES.—Plants of the different kinds selected for early forcing having filled their pots, which are generally small and full of roots, some little care will be needed in their management, particularly in the way of watering, as an excess of water may start the most prominent crowns, and the want of it might seriously injure the roots by causing the balls to shrink, and letting them separate from the sides of the pots. Later plants in larger pots are less liable to suffer in this way, but with these judicious watering until the time arrives for storing away will form a very important item. The best time to water is early morning, when every plant should be examined and supplied for the day without wetting the crown or foliage, particularly when diluted liquid is used as a stimulant. Let all plants be kept quite clear of weeds and runners, and give an abundance of space between the pots to let in light and warmth, which will facilitate the ripening of the roots as well as the crowns. In many places great difficulty has been experienced in getting healthy runners for early potting, and on this account the plants will have been making vigorous growth throughout the past month, but, notwithstanding the lateness of the season, the same ripening process must be gone through by elevating the pots on dwarf walls, planks, or shutters until the weather breaks in November. Worms, if possible, find their way into the pots, and soon do considerable mischief by running through the rich, heavy compost and clogging the drainage. Experienced growers go upon the principle that prevention is better than cure, but when they do find their way into the pots no time should be lost in getting them dislodged by watering with lime water before the plants are stored away for the winter.

PINES.—Plants which have well filled their pots with roots, if intended for starting early in January, will now require a drier atmosphere, with liberal ventilation whenever the weather is favourable. As days decrease in length and more fire-heat is needed, the minimum temperature may range about 68°, with a rise of 10° to 15° in the daytime, but no fixed rule must be adhered to, as the weather at this season is very changeable, and it is best to keep below rather than above these figures when the plants are going to rest. The most important point in the successful management of tender kinds like *The Queen* when resting is the bottom-heat, which should range from 80° to 85° for the next three months, and if this can be secured by keeping them plunged to the rims of the pots in dry tan or leaves, there is little danger of the roots going wrong or the fruit coming up prematurely. Plants intended to make growth before they start in the spring should still have every encouragement, particularly when favourable weather prevails, by maintaining a temperature ranging from 70° at night to 80° by day, and 85° to 90° at the roots. Give atmospheric moisture by syringing all available surfaces, including that of the bed, when the day temperature begins to rise, and again when the house is closed, but guard against syringing overhead, particularly in dark, heavy houses or close pits. By this time the potting for the season should be complete, but where stock is likely to run short a few of the strongest suckers which have well filled their pots with roots may be shifted into medium sized fruiting pots and plunged in a sharp bottom-heat with their heads near the glass in a light span-roofed pit if at command. In a favourable position with due attention to surface heat

the plants may be kept in good growth for the next six weeks, and slowly moving through the remainder of the winter. Collect all fruiting plants together in a house by themselves where they can receive treatment most favourable to the swelling or ripening of the fruit, as anything approaching a close stagnant atmosphere through the last stage prevents the Pines from keeping after they are cut.

INDOOR PLANTS.

ASPARAGUS PLUMOSUS.—Being a native of the Cape as well as further northwards—as far as Natal—this species is undoubtedly a greenhouse plant, and thrives well in a house where *Pelargoniums*, &c., are grown. Here we have two plants planted out in a cool conservatory, as well as several good plants in pots in another cool house. Those planted out are in a compost of loam and peat with a little brick rubble; below 1 foot of this there is a good drainage of broken bricks, &c. During summer, when these plants grow like weeds, they are assisted with a little weak manure water about once a week; during winter no water is given. Those in pots are in a similar compost to that described above, and these, as well as those planted out, are kept to supply cut sprays. In addition to these we grow about a dozen small plants in 4½-inch pots for table work, and to those who have not seen this plant thus employed, we recommend it as one of the most telling, the graceful deep green sprays and elegant habit of the plant rendering it, in our opinion, the very best among table plants. The propagation of this species is easily managed, seeds which are frequently produced on our oldest plants germinating as freely as the garden *Asparagus*, and growing into useful little table plants in about twelve months.

BULBS.—One of the best for November, December, and January is the Roman Hyacinth. Until January we have been more successful with this than any other. It may either be grown to make a display in pots or for cutting. Five bulbs in a 6-inch pot make a pretty display, or they may be placed singly in 3-inch pots, and, for cutting only, quantities of them may be grown together in boxes. There is no difficulty in getting them into flower, and every one, no matter how inexperienced, may succeed in their culture. Other early Hyacinths, which may be had at Christmas by a little attention, are *Grand Vainqueur*, *Pelissier*, *Mdme. Tallyrand*, *Grand Védette*, *Bouquet Tendre*, *Panorama*, and *La Tour d'Auvergne*. Some of these are bright in colour, but some might probably be grown more for scent than show, and one or two varieties of the scarlet Tulip may be grown for their brightness, and in this respect no kind is superior to the *Duc Van Thol* class. As regards *Narcissi*, the double Roman and Paper-white are easily managed, very early sorts. Crocuses we have never been able to get in bloom before the days began to lengthen; indeed, their culture for early winter decoration need not be attempted. Those bulbs which have been named for early flowering should be procured at once and potted; a mixture of loam and leaf-soil or half-decayed manure is suitable for all kinds of bulbs. It is necessary that they should be placed in the dark some weeks before forcing. When placed under a thick covering of ashes, Cocoa fibre, or sawdust, they soon show signs of growth. In bringing them on to bloom they should, if possible, have a position near the light and a temperature of about 60°.

CHRYSANTHEMUMS are always useful late in autumn and early in winter. At present all *Chrysanthemum* pots will be well filled with roots and the bloom buds showing. They should occupy the most sunny position obtainable, as it is of the utmost importance that the wood should be well developed and hard, and great care should be taken that they never suffer from want of water at the root. Manure water may now be freely given. The middle of October or later is early enough to remove them from the open air under cover, and the house in which they are placed should be cool and unshaded. By many

they are considered not ornamental enough to be put in the greenhouse or conservatory before they begin to bloom, and until then a cool Peach house or similar place will suit them. Some of our *Chrysanthemums* are placed in a slightly heated house, and others in a house in which there is no heat, and by means of the two places we always manage to have blooms from the beginning of November until a little way in January. When in flower they are always kept very moist at the root, but the atmosphere, especially where there is no heat, is always kept as dry as possible, as the flowers suffer from damp, especially those of the Japanese kinds. February is the month when most of the *Chrysanthemum* cuttings are put in, but tops rooted in July, and grown on in 3-inch or 4-inch pots, make pretty little plants for Christmas blooming; in fact, for small vases or dwarf edging plants they are much more useful than the others.

SALVIAS are another grand class of winter-flowering plants. They are as easily rooted, grown, and bloomed as *Chrysanthemums*, and are just the plants for those who have no great amount of heat at command in winter. They grow quickly and bear stopping freely. They also speedily fill their pots with roots, and where large plants are wanted plenty of pot room must be given; 8-inch pots are the largest we use, and we have small plants furnished with three or four flowering shoots in 2½-inch pots. It is from the point of each shoot that the bloom comes, and the more points produced by frequent stopping the better. Stopping may be practised until September, and the points taken off may be rooted until then. They like a rich soil. In summer they may be grown out-of-doors, and about this time they should be placed in a cool house or frame well exposed to the sun. Here the shoots will lengthen, and from November onwards abundance of flowers will be produced. Further on when plants show signs of becoming exhausted they may be placed in a little more heat, their food increased, and a succession of bloom will be the result.

CHINESE PRIMULAS.—These should always be grown in quantity for winter flowering. Some strains are very much superior to others, and care should be taken to secure the best. Useful plants may be grown in 4-inch pots, and the largest in 6-inch ones. At the present time the earliest are just showing bloom. A little soot water now will improve them greatly; strong liquid manure must not be given. Many grow their Primulas in the shade in summer. Ours are grown in the sun, and those which have been previously in the shade should be put in a sunny position at once to harden them for the winter. Primulas and other soft-wooded plants have a tendency to decay in damp weather or in moist positions in winter, and those grown in the shade are always worst in this respect. It is surprising how much better plants grown in the sun will stand the severities of winter. Primulas do not bear strong heat well, and they do not force readily, but all forward plants in light, airy positions now will bloom fast enough without forcing. From now onwards Primulas require to be watered with care.

ABUTILONS.—These are not so extensively cultivated as they should be. We are annually increasing our stock, and have never too many. They are easily cultivated in summer, and bloom with great certainty in winter. Until the end of this month a cold frame is a suitable place for them, and after that any kind of greenhouse. Their beautiful bell-shaped flowers are produced in numbers at the point of every shoot, and until they are allowed to flower they should be constantly stopped in order to make them branching and bushy. From now onwards they may be said to come naturally into bloom, and they will continue to do so the whole winter through. For this purpose, however, it is important that they be well ripened, and if this has not already been accomplished it should be set about at once. During long periods of cold, dull weather a little fire-heat assists them to open more freely, and liquid manure is beneficial when the pots are full of roots. From even a

small collection flowers may be had almost every day in the year, and their shape and colours enable them to be used in the most choice arrangements.

BOUVARDIAS may be classed amongst the choicest winter flowers. They, too, are easily grown, but not so much so as some things; young healthy plants of them are more satisfactory than old ones. Early propagation and frequent stopping will secure dwarf bushy plants for winter use. A cold frame fully exposed to the sun is their proper summer quarters. Now they may have a little more warmth, but very little, as strong heat now will hurry them over, and they will be weak and straggling long before they come into flower. From a frame we shift ours into a cool house, to which no artificial heat is applied until it is wanted to keep out frost. Those we want to bloom in October and November are showing quantities of buds now, and later ones are still being pinched. Cutting the flowers induces fresh growth, and consequently more blossom. Cleanliness is a great matter in the case of Bouvardias, and to this a sharp eye should be kept.

CELOSIAS.—These are not produced from cuttings, but may be readily obtained from seed. This for the winter plants need not be sown before July, and from then until now the young plants may be grown on in frames. After this they should have a little more heat, such as is generally afforded by one of those useful odd houses set apart to bring flowers forward for the conservatory. As the shoots grow they are always inclined to bloom at the points, and if this is allowed to take place they will not become very bushy, but by picking the blooms off as they appear, shoots and leaves will be made, and the flowers may be allowed to form after the plants have got to a good size. The flowers may have been kept off until now, but after this they should be allowed to grow, and during November and December they will make a pleasing display, their feathery plumes mixing in and contrasting well with the other flowers already named. Small plants in 6-inch pots are generally the best after this time, or two or three may be put into a larger sized pot.

FLOWER GARDEN.

TIMELY NOTES ON PLANTING FLOWERS.

IN no season of the year can the planting of hardy flowers be done with more satisfaction and comfort than in August and September. Where work and time press, it is a happy feeling to know that two birds have been killed with one stone, but not a few instances might be mentioned to show how, at this period, twice that number of items of important work can be got through by, as it were, one move or the carrying out of one idea. I wish to convey the fact that certain operations should be seasonably gone through now, at least as regards one or two matters, because if once accomplished and the results noted, a deal will be found to have been gained in the amateur's experience of gardening, and the reward will be increased enjoyment—in other words, timely and proper planting will show hundreds of amateurs that their failures have not hitherto been so much from want of time and labour as from the non-use of these at the right period. Now, for one or two examples before we go further. Let us take a mixed garden where fruits and hardy flowers are grown. By midsummer many plants will have done flowering, and will present an untidiness which we would like to remove; that is fact number one. Next, we see hundreds of seedlings springing up everywhere; practically and for present purposes they are weeds, or, say, good things in the wrong place; they may be Wall-flowers, Snapdragons, Poppies, Foxgloves, Evening Primroses, Forget-me-nots, Canterbury Bells, and similar flowers. That is fact number two. Then it may be observed that all the best fruit is just about cleared, and there is the usual wear and tear; a few broken branches here and there; the soil has a hard-trodden and an ungarden-like appearance, and for all purposes it would be the

better for being put in order. That is fact number three. Lastly, somewhere about the place there will most likely be an accumulation of refuse or manure, as the interval during which it is not used will have been about the longest of any during the year. Now, here we have four sources of untidiness, all unavoidable in a certain sense, but all capable of remedy about the latter end of this month.

WHAT SHOULD BE DONE? Let us "waste not," that we may "want not." Let us utilise each misplaced article for the general good, and have it done during the long days and pleasant weather. There is no need to upset the place, as we shall see. To begin, let us trim off the broken parts of the fruit bushes, cut out the old and spent Raspberry canes, placing supports to the reduced numbers of the new ones to be left for next year's fruiting, and also pinch or summer prune the fruit trees; take all this woody refuse to some place to be burnt, for we shall shortly want the ashes. Now have wheeled on the trodden but cleared spaces what manure is wanted; let digging be done, burying the refuse in the trenches; as the spade-work goes on use a dibbler with or without a line, and plant from all parts of the garden the seedlings of such flowers as I have just named, which happen, by the way, to be kinds that like a little shade and flower earlier for it in spring. In the more open spaces the untidy browned plants, such as the single and double Pyrethrums, Delphiniums, Dicentras, Pæonias, &c., may be divided and replanted, that is, such as may be supposed to be needing it, and then such favourites as Primroses, Polyanthuses, and Daisies may be set in veritable carpets under trees or anywhere, and how grateful they seem for a new bed and deeper planting in summer. When the planting is finished, after a more or less prolonged time, the ashes of the burnt prunings may be scattered over the newly set roots; these sweeten the plot, check the ravages of slugs and stimulate growth. All this may be termed but the carrying out of one idea, and what is the result of it? Much good has been done; the fruit quarters look trim; the refuse is in its proper place—in the land. Misplaced and valuable seedlings are now where they can thrive and become a source of pleasure in spring instead of being cast away, and then being transplanted in summer will prove of far greater advantage than if performed at a later period. All these young plants may be looked upon as a clear gain, as a reserve from which one may draw for the supply of gaps in any part of the garden. By operations of this character a garden soon assumes a neatness which it had outgrown, and the result is satisfactory on every hand. This is routine work, which is carried out year by year, and the results always compare or rather contrast well with those where the management has been lax during summer. Summer does not offer much opportunity for tilling the ground, but this should only be another and stronger inducement for its more thorough working when the chance does occur.

A general idea may thus be gathered of when, how, and where to plant certain flowers, and it may be useful to notice a few things, especially for making a fine show of colour in the early part of the year. In doing this I only propose glancing at a few good old favourites, such as everybody loves to see. In such quarters Wall-flowers may be planted in that style which always sets them off to most advantage, viz., in masses. Daisies can be had in flower many weeks earlier by summer planting in a little shade than they otherwise would be. Foxgloves now to be had in such magnificent kinds, and so popular, would form an unusual treat. Violets, Primroses, and Polyanthuses would make a lovely group, and be likely to do well under such comfortable conditions. Globe flowers would make a good show the season after being transplanted, and such bulbs as Crocuses, Daffodils, and Tulips would have a snug and pleasing effect among shrubs or fruit bushes. Snowdrops are tempting, but these usually require more than a year to be had effective. Campanulas of nearly all kinds would be suitable, but more

especially the earlier bloomers. The March and April flowering Leopard's-banes are exceedingly rich and unusual flowers, coming so early. Columbines will be found to yield finer bloom in a little shade, and do well the first season. The finer kinds of this favourite flower ought to be much more grown than they are. Many other things might be planted under the conditions above set forth, such as Hepaticas, Christmas and Lenten Roses, Rose of Sharon, Omphalodes verna, &c., but I do not recommend them, as they do not get into a free flowering state the first year, and need to be left undisturbed for years together. It were well to enquire which of the more desirable hardy flowers could be grown in semi-shaded places and to indicate them, but the enumeration given in no way pretends to be a full one, and it may be added to according to available supplies or the kinds desired. My object has been to show that by timely planting, early and favourite flowers may be produced on formerly useless ground, and I am sure if the reader will try the plan once, the earlier and more abundant show of spring bloom will afford a cheering reward. J. WOOD.

Woodville, Kirkstall.

MANURING HERBACEOUS PLANTS.

DOUBTLESS, where practicable, a mulch of manure is of great service even to herbaceous plants, but "J. C. C." (p. 183) exaggerates the importance of this by comparing their exhaustive effects on the soil in a space of two years with those produced by Onions and Cauliflowers in a few months. The comparison is scarcely a fair one, inasmuch as the produce in the latter case is taken away from the garden, whereas in herbaceous borders the nutrient matter is returned to the roots on the approach of winter, when the plant apparently dies, there to be stored for future use. Kitchen vegetables, on the other hand, use a far greater proportion of soil constituents than garden plants, ranging as they do up to 80 per cent. of their weight in potash and soda compounds; these taken out of the garden must, of course, be replaced by means of manure, unless the soil is to be permanently impoverished. Besides, herbaceous plants increase and multiply to such an extent, that we have regularly to take up and divide them, or they would become too crowded to obtain their due share of light, heat, and moisture; and here, I imagine, is the true cause of the plants to which "J. C. C." alludes being so deficient as they are in healthy growth. To plant bulbs and perennial plants in moderately prepared soil and leave them to chance is well enough for a while; but without occasional lifting and division so as to distribute the surplus growth, is to tempt Nature to return us for our neglect a dwindled, poor, and weakly growth, with few and poor flowers, such as those complained of. "J. S. W." (p. 221) states that some of his borders have not been manured for years; still there appears no deterioration in the plants. He also tells us of bulbs, such as Daffodils, growing and flowering for twenty years without assistance. The case of lawns, however, is somewhat different; they may go on for many years without any manure, as by analysis 60 per cent. of the ashes of hay (for example) consists of silica; and as 79 per cent. of good light sandy loam, the perfection of Grass land, consists of silicates, we can see the reason of this. Little is required to produce a silky, dense lawn besides rain and repeated mowings. To manure lawns is to encourage coarse, vigorous growth. "J. S. W." asks what the Grass lives upon if not upon the food supplied in the rain. I may reply that Grass food is principally carbon, much of which is obtained from the air, and after this a structure of sandy and other matters dissolved by the rains which fall, containing oxygen, hydrogen, and ammonia in solution, the latter at the rate of 80 pounds per acre per annum. We know ammonia to be a valuable stimulant, and can thus readily see the advantage of using rain water wherever obtainable in preference to any other. This is the reason why the lawns which "J. S. W." names remained fresh and fair for thirty

years without manure; yet in exposed hot soils, if the Grass be frequently cut and carried away, there is a tendency to deteriorate, not so much by impoverishment as by the exposure of the young growths and roots to a burning sun and drying wind; whereas if a fine cutting be occasionally left on, the tender shoots and soil get a beneficial shade. A dense, green, and velvety turf is the result, without any objectionable appearance from the Grass being left on, provided the Boxes are omitted only on a close short cut. Manuring lawns is objectionable; and as to manuring herbaceous borders, I am of opinion that it is far better to leave them alone than to force the plants to run the gauntlet of stabs and wrenches from the border fork when used in "lightly forking in;" but in cases where it seems imperative, a mulch or sprinkling of old crumbly, rotten manure answers the purpose and does not look so unsightly as the annual manurings given to our flower beds occupied with tender plants, as recommended by "J. C. C.," who, by the way, is, I think, wrong when he says that "it stands to reason that there are plenty of herbaceous plants that will in two years exhaust every bit of nutriment contained in the soil in which they are growing."

R. A. H. G.

FRENCH AND AFRICAN MARIGOLDS.

VISITORS to the recent horticultural exhibition at Dundee could not fail to have been struck with the beauty of the French and African Marigolds shown upon that occasion. In the case of the African we saw four or more distinct types, not that these were new, for we have grown them in the south for ten or twelve years past, but the cool moist climate of the north and the special and careful attention bestowed upon them enabled one to see them to the best advantage. The orange and lemon types were clear in colour, the petals broad and smooth, and so overlapping each other as to form large and extremely handsome flowers. The fine golden variety was there also, and the quilled Primrose form. Years ago we made efforts to select and fix these two last, but they would hark back to the common forms, notwithstanding our efforts to the contrary. The French kinds were shown in three forms, the rich orange-chestnut self, the deep golden self, and the striped form. Now, a perfectly striped French Marigold should have a broad, well defined golden stripe running down the centre of each petal, and equally clear, well defined stripes of rich chestnut or maroon at the sides, the petals regularly displayed, and so form a perfect rosette. Compare these with the ordinary African and French Marigolds seen in the south, and how great is the difference. A centre of quilled florets—what some term a "buzzle-eyed flower"—is a great disfigurement, and it is never seen in the exhibition flowers in the north. The favourite French Marigold in the north is what is known as the tall striped; it is a rampant and inelegant grower, but produces flowers of the highest quality. I saw at Mr. John Downie's nursery, at Murrayfield, one or two fine forms of the striped French Marigold, one of them of extraordinary size, grand in form, and finely striped. All growers of striped Marigolds know that seed saved from the finest varieties will produce inferior forms, and Mr. Downie was trying the experiment of layering a few of his choicest types, pegging them down into pots of soil much as one would Strawberry runners. Whether he will succeed in rooting them remains to be seen. He had also put in cuttings of some of the best, and by this means hoped to secure plants that he could winter in a warm house. He will experience some difficulty in doing this, but the varieties are so fine and so well deserving of being preserved, that we hope he will prove successful. In one of his greenhouses Mr. Downie showed me a few plants in pots, which he had received from a gardener in the north of Scotland as representing the finest strain of French Marigolds he had ever seen. They were seedlings, and all were single and very poor, and yet the seeds might have been taken—as we have no doubt they were—from a variety of the very

best character. In Mr. Downie's collection was a plant bearing single flowers with but one row of petals, but these marked in the most approved manner. He said he should retain this plant for seed, as he had found that a finely marked single variety when grown among fine double forms produced double flowers remarkable for their excellence. Previous to making a journey to Scotland we had attended some flower shows in the west of England and in the midland districts where Marigolds are shown for prizes. The African varieties were generally pretty good, but the French kinds were poor—too poor in not a few instances to deserve the awards made to them. But so long as judges give prizes on the ground that they are the best produced, so long will ill-conditioned flowers be placed on the exhibition table. R. D.

CORYDALIS SEMENOV.

THE bulbous or tuberous-rooted section of the genus *Corydalis* is certainly amongst the easiest plants to cultivate on rockeries which we possess, and by far the most useful where time during the seed-sowing period is a consideration. Being nearly all natives of Siberia, they are perfectly hardy and quite at home in this country under one condition, viz., they must be kept absolutely dry during the resting season and watered only occasionally, even when in active growth. The kind



Corydalis Semenovi.

of treatment recommended for the *Leontices* and also for the *Bongardia* will suit them admirably, but where objection is made to hand-lights or bell-glasses being used in the rockery, they may be planted under overhanging ledges, which, by the way, ought to be made specially for them. The soil should be scooped out to the depth of a foot and old lime rubble to which has been added a little loam and leaf-soil substituted. In planting the tubers care should be taken not to cover the crown; simply lay it on the prepared soil, slightly pressing and fastening it down with a hoop peg. *C. Ledebouriana*, *C. Sewerzowi*, and *C. Semenovi*—the one represented in the annexed illustration—are all very desirable kinds and good rock plants, especially the last, which has finely-cut Fern-like glaucous leaves. Its flowers, which are borne on stalks from 6 inches to 9 inches high, are tubular, about an inch long, and produced profusely. They vary in colour between opening and falling from a dullish yellow with a tinge of purple to reddish or dark purple, and are very handsome in early spring. K.

French Marigolds.—How bright, fresh, and pleasant these look at the present time. They do not seem to mind inclement weather at all, and bloom, I think, with greater freedom in September than at any other time. It is, however, important to secure a good strain with well-formed, distinctly marked, and perfectly double flowers (I do not think the single ones worth growing), the plants at the same time being of bushy, dwarf habit. Given these desired features, and I doubt

if any flower will be more admired in the outdoor garden at this season of the year. The seed should be sown in warmth in March, so as to get nice little well-hardened plants ready to put out by the last week in May. They then become effective by August, and last good till the late autumn frosts.—J. C. B.

HERBACEOUS BORDERS.

IN forming new borders of this kind the condition of the soil must determine what amount of preparation is necessary. If the ground has laid any length of time without being cultivated, it will require more preparation than that which has lately been occupied with other crops. Let it, therefore, suffice to say that in order to secure lasting success, a depth of from 18 inches to 2 feet of good soil is necessary; and as many of the subjects with which it will be planted will be permanent in character, it should be trenched to the required depth. Any large stones or other rough material should also be picked out of it, and if the soil is poor, something stimulating should be added. This may consist of well-rotted farm-yard manure or fresh earth. On strong, heavy soils, leaf mould, road grit, or charred rubbish will be better than strong manure. When either of the last-named materials are used, they should be spread on the surface after the land is trenched, and then be forked in. It is of primary importance to secure a good tilth, so that the roots may have a fine, well-broken soil on which to lay hold. On this success a good deal depends, especially in the case of small plants and those with few and delicate roots. Planting may be done either in spring or autumn but I am decidedly in favour of the latter. There are, however, some few valuable hardy plants which, unless I could secure large sturdy pieces, I would not like to risk planting in the autumn; I would rather get them home before winter and give them some protection until spring. All, however, except the most hardy and strong-rooted subjects, should be planted by the middle of September, and then they will have time to get settled in their new quarters before severe weather sets in. Whenever I have adopted early planting, and have put in fair sized pieces, I have not known any reputedly hardy subjects to suffer from a hard winter. Having to deal with a soil that is not favourable for many tender-rooted plants, owing to its harsh and crude character, I have frequently to make the stations with some good soil before I can put in the plants, and there are a good many other gardens where the soil is not of a kindly nature in which a few handfuls of fine sandy soil if put round the roots of fresh planted subjects would be of great benefit to them. I find that such little extra attentions as these make all the difference in the results.

THE ARRANGEMENT of the plants in a herbaceous border will depend somewhat on what they are, but more depends on the width of the border. A much more striking arrangement can be made in a moderately wide border than in a narrow one. A width of from 10 feet to 14 feet is the most suitable, as then plants of a proportionate height and diameter can be grown in it. I like for the back a few deciduous and evergreen flowering shrubs; they diminish the bareness during winter, and there are so many flowering shrubs of compact growth which blossom early in spring, that they add considerably to the attractiveness of the border. I, however, leave spaces between the shrubs, which should form the back row for such tall-growing plants as Hollyhocks, Tritomas, Helianthemums, and that very handsome summer-flowering Reed, *Arundo conspicua*. It is best to plant in lines, as then one can get between the plants to attend to them. In the next line may be the tallest of the Michaelmas Daisies; the best of these are *Novi Belgii*, *Chapmani*, *formosissimus*, *lavis*, and *polyphyllus*. Other plants may consist of *Chrysanthemum speciosum*, *Harpalum rigidum*, *Corysanthes lanceolata*, *Hyalcinthus candicans*, *Larkspurs*, *Golden Rods*, tall *Campanulas*, *Anemone japonica*, *Phloxes*, perennial *Lupines*, scarlet *Lychnis*, *Thalictrums*, *Paeonies*, and perennial *Peas*. The third row may

include Veronicas, *Dielytra spectabilis*, *Gaillardias*, *Sedum Fabaria*, *Eurothera fruticosa*, *Potentillas*, *Dictamnus Fraxinella*, *Campanula persicifolia*, *Asphodelus luteus*, Canterbury Bells, *Antirrhinums*, Wallflowers, *Aquilegias*, and *Matricaria inodora*. These are all that should be planted in lines in borders of the width stated. I find it to be more convenient for the growth of low-growing subjects to have a space 3 feet in width along the front for bulbs and other dwarf-growing plants which look best when not arranged in rows. Of course a little attention must be paid to the height of the various subjects; for instance, in the case of bulbs the late-flowering single Tulips, Jonquils, and Narcissi should be at least 2½ feet away from the front, and such plants as *Alyssum saxatile* compactum, *Iberis corifolia*, *Campanula carpatia*, *Rudbeckia Newmanii*, double and single *Pyrethrums* should be in front of them. To these might be added Sweet Williams, Pinks, and Carnations. For the space next the walk there are so many subjects of a dwarf character so well suited, that one hardly knows which to select. Of bulbs I should certainly plant Hyacinths, Tulips, Crocuses, Snowdrops, Anemones, Jonquils, Irises, Grape Hyacinths, winter Aconites, Scillas, Snowflakes, *Triteleias*, and hardy Cyclamens. Mingled between the clumps of bulbs should be *Aubrietias*, Pansies, Violas, *Phlox frondosa* and *P. Nelsoni*, *Polyanthuses*, Primroses, *Erica carnea*, *Arabis*, *Eurothera macrocarpa*, *Myosotis*, *Plumbago Lapentæ*, and many others which I need not name. I have already enumerated sufficient to produce a lasting display. J. C. C.

HARDINESS OF AGAPANTHUS UMBELLATUS.

A mild winter and a hot summer evidently suit this plant better than when these conditions are reversed. Our plants, which have stood in the open borders for the past eight years, are just now conspicuous objects. They are flowering grandly, and the foliage, too, is both plentiful and fine. I have known them to flower fairly well before after a mild winter, but their condition this year surpasses that of all previous ones, and it makes one feel that they are deserving of more attention than I have yet given them. We have one plant with five large heads of flower on stems quite 4 feet high. This is the variety called magnificent, and well it deserves its name. It is greatly superior to the common form, which has much smaller heads of flower and much shorter stems. Since our plants have been where they now are they have stood 26° of frost without any protection whatever; although the foliage was killed, the roots have always survived. Last winter was, however, so mild, that the leaves were retained unharmed, and the result now is, as I have just stated, a grand display of flower, but when the leaves have been injured during winter, if the plants have flowered at all, they have done so but weakly. This seems to show that if we want this plant to flower regularly and well, we must keep the leaves green and healthy; those, therefore, who are desirous of having it in their borders may, I think, do this by affording it the shelter of a hand-light with a mat thrown over it in frosty weather. I cannot hope to give it so much attention, but I will try lifting it in October, placing it in a large pot and wintering it in a frame where it can have light and air to preserve the foliage. After all danger of frost is over I will plant it out again. In this way I feel sure that I shall ensure noble heads of flowers every year. J. C. C.

Helianthus doronicoides.—Since writing the note on Sunflowers which appeared in THE GARDEN (p. 245) I have received the second part of Asa Gray's new work of the "Flora of North America" containing the Sunflowers. The cross-naming there noted is most perplexing, but I must say something about this name *doronicoides*. The plant I described in my note to THE GARDEN was the *doronicoides* of the herbaceous garden at Kew and of Asa Gray's "Botany of the Northern United States," fifth edition, 1876, page 257; but in his new book this name is transposed, and H.

doronicoides of Lamarck preferred to it. As far as I can make out, this latter is identical with the plant I have distributed as *doronicoides*, though the characters of some of these Sunflowers are most perplexing and uncertain. C. WOLLEY DOD, *Edge Hall*.

THE AUTUMNAL SNOWFLAKE.

(*ACIS AUTUMNALIS*.)

THIS dainty little flower is now in bloom with us, and is so beautiful in its own modest and unassuming way, that one may be excused for wishing that it were more plentiful. Its silvery bells call to mind the earliest Snowdrop, that little *Galanthus octobriensis*, of which the late Mr. Harpur Crewe used to be so proud, as it is seen in blossom along with the Colchicums and Crocuses of the waning year. That we get a flush of spring-like flowers now that falling leaves and cool, misty nights remind us that summer is ended is a remarkable phase of plant life, and one that helps to make



The autumnal Snowflake.

even the time of the "sere and yellow leaf" enjoyable in all good gardens. Our little sketch shows *Acis* (*Leucojum*) *autumnalis* of the natural size, and its leaves are added, although in reality they are not always present at the time of blossoming. *Acis autumnalis*, under the name of *Leucojum bulbosum minus autumnale*, is figured and described by Clusius in his "Historiæ Stirpium," 1576, p. 271-2. Faithful old Parkinson describes this plant at p. 110 and gives a woodcut of its flowers on p. 107 (fig. 10) of his "Paradise, or Garden of Pleasant Flowers" (1656). He also describes another dwarf spring-blooming *Leucojum*, or bulbous Violet, and as this plant is not now common or well known, what he quaintly says of it may prove of more than usual interest.

LEUCOJUM BULBOSUM VERNUM MINIMUM (the small bulbous Violet of the spring).—"This small *Leucojum* sendeth forth his small and long green leaves like hairs in autumn and before winter, which abide green until April, and then wither away quite, and about May there ariseth up a naked slender stalk, at the top whereof break

forth two small white flowers, made of six leaves apiece, hanging down their heads, the three inner leaves being a little larger than the three outward, a little reddish near the stalk, and very sweet; the root is small and round, and covered with a dark coat."

This plant, which is very rare in cultivation, is no doubt the *Leucojum hyemale* of the *Botanical Magazine*, plate 6711. This pretty little white-flowered bulbous plant, resembling much in general appearance one of the smaller varieties of *Narcissus*, is indigenous to a small strip of rocky shore on the Riviera, reaching from Nice to two miles east of Mentone, and as the name *hyemale* conveys a wrong idea, as the plant does not bloom till April, M. Jordan has proposed to change its name to *nicæensis*, which would be more appropriate. It has also been described under the various names of *Galanthus autumnalis*, *Acis hyemalis*, *Ruminia hyemalis*, and *Ruminia nicæensis*. It was first sent to Kew in 1870 by the late Mr. J. T. Moggridge, and flowered there in the herbaceous border in the spring of 1871. It is also figured in Mr. Moggridge's beautifully illustrated work on the "Flora of Mentone" on plate 21. *Acis autumnalis*, the little plant figured, is also described as follows by Parkinson:—

LEUCOJUM BULBOSUM AUTUMNALE (the small autumn bulbous Violet).—"As the former small *Leucojum* sprang up with his leaves without flowers in autumn, so this, contrariwise, riseth up with his slender brownish stalk of flowers in autumn before any green leaves appear, whereon stand two or three very small snow-white pendulous flowers, consisting of six leaves apiece, and a little reddish at the bottom of the flower next unto the stalk, so like unto the former that one would take them to be both one; after which, there grow small brown heads containing small, black, round seed; after the flower is past and the seed is ripening, and sometimes after the heads are ripe the leaves begin to spring up, which, when they are full grown, are long, green, and as small or smaller than the leaves of the autumn *Hyacinth*, which abide all the winter and spring following, and wither away in the beginning of summer. The root is small, long, and white."

At p. 110 Parkinson also tells us that these two small kinds "were first found in Spain and Portugal and sent to me by Guillaume Boel, but the first was so tender that scarce one of a score sprang with me or would abide." Boel was a Dutchman, and perhaps one of the earliest of plant collectors, and Parkinson complacently informs us in another part of his quaint old book that he sent Boel into Spain "almost wholly on my charge," adding that he brought him "little else for my money than seeds of chiceling Peas," but he gave seeds to others, so that "I beate the bushe and another catcheth and eateth the bird."

F. W. B.

A SCILLY BULB FIELD.

WE have for a long time been told that *Narcissi* were plentiful on the Cassiterides. But it is only within the last few years that specimens of them have reached Covent Garden. The islanders, simple folk, never thought of turning to advantage the Scilly whites (the true *Polyanthus Narcissus*) of their weedy gardens. With the accession to power, however, of the present king a new order of things has arisen, and *Narcissus* growing has become quite a staple trade. In every suitable locality bulb grounds are being formed, and January and February have become flowery months. The bulb field *par excellence* of the islands is, however, on the Tresco Abbey estate, and this is the one to which I am about to allude. It is on the southern slope of a hillside. The ground is divided into strips 90 feet long and 30 feet broad by Reed screens, which are to be replaced by hedges of *Escallonia macrantha*. The plants to form these hedges were planted about three years ago at the base of the screens, and have already in some instances reached the top thereof, a height of some 4 feet or more. Since rooted cuttings of the preceding year were alone used,

a good idea is given of the value of this *Escallonia* to the Scillonians.

THE SOIL is in the form of sand, blacker and fuller of decomposed organic matter than that of Overveen or Vogelenzang. The bulbs are inserted in raised beds, slightly manured with decayed seaweed, kept for a year, and cow manure; this dressing is renewed before each planting. The foliage is always allowed to die down, and thus if the bulbs are not taken up that year nothing is wanted in the way of manure, except perhaps a thin sprinkling of seaweed. The length of time during which the *Narcissus* bulbs are left undisturbed varies from one to three years, according as they are required for flowering purposes or for multiplication. The date of lifting is the month of June; the offsets are then removed and the bulbs kept for about a month. Replanting commences in the middle of August and is proceeded with as actively as possible. So favourable is the climate, that *Tazettas* can be sent into Covent Garden before Christmas, to be followed in uninterrupted succession by the *Soleil d'Ors*, *Scilly whites*, and *Gloriosas*. The way in which the bulbs multiply in the fine rich soil here is extraordinary, and Mr. Dorrien-Smith's stock can be counted by tens of thousands. They are not quite in a condition as yet to come into the market, but so much has been done in three years, that every hope can be entertained of their soon being able to do so. A very practical and efficient method is adopted for keeping the varieties distinct both in lifting, storing, and planting, and the future purchaser can be without reserve guaranteed truthness to name. Since the *Scilly* bulbs ripen fully a month earlier than in Holland, their value for forcing and for early flowering will be incalculable. Let us, however, again turn to our bulb field. A glance at the labels shows that every species that can be bought is there, besides many others that cannot.

VARIETIES.—The *Polyanthus* varieties most grown are *Victoria*, *Jaune Suprême*, *Staten-General*, and *Grand Monarque*. The *Tazettas*, especially the *Paper-white* and *Dubius*, are also in great quantity. Among the *Ajaxes* are a stock of *Emperor* and *Empress*, sufficient to excite the envy of the most easy-going bulb-lover. There are besides large beds of *Horsfieldi*, *obvallaris*, *Van Sion*, *princeps*, *sulphur*, *orange*, and *silver Phoenix*, *Trumpet maximus*, *ruglobus*, and *lobularis*. In lesser quantity are those gems the *Corbularias*, including *Clusii*, *Graelsi*, and *citrina*. *Rupicola*, *Leedsii*, *amabilis*, *C. J. Backhouse*, and many other dainty kinds Mr. Dorrien-Smith cultivates more for his own amusement than anything else. Besides the *Ajax* varieties mentioned above, an immense number of *pallidus præcox* are planted. *Macleayi* and *Bazelman major* are also largely grown. *N. poeticus ornatus* can be reckoned by the 10,000, and the stock of *grandiflorus*, *recurvus*, and *plenus* by twice or three times that number. These, with a large number of incomparables, *Bulbocodiums*, and *odoratus fl.-pl.*, will be probably found to contain the varieties for which there will be the greatest demand. Mr. Dorrien-Smith is also fortunate enough to be the owner of a large quantity of *La Favourite*.

Besides *Narcissi* are cultivated many *Iris*es, both English and Spanish, and the collection is completed by the prettiest of the *Kämpferi* group and by such varieties as *susiana* and *iberica*. *Ixias* and *Lilium candidum* are grown for the sake of their flowers, which usually command good prices. And since the last few days of August the whole field has been brightened by large beds of *Amaryllis Belladonna*. These are in the greatest possible perfection, some spikes carrying as many as 20 flowers. The soil is also adapted for the *Guernsey Lily*, and indeed for all kinds of bulbous plants; and given the Dutch canals and ditches, fine *Hyacinth* roots could be produced.

C. A. M. CARMICHAEL.

Violets.—It seems but a short time ago when we were picking the double Russian, and now (the second week in September) we are picking good bunches of *Patriæ*. This and *Venice* are two

capital *Violets* of the lesser known varieties, and which, together with *Victoria Regina*, *Marie Louise*, and *Neapolitan*, will keep us well going until the Russian is again ready. *Carnea floribunda*, a very sweet pink variety, has been in bloom more or less through the summer months, supplying the link between spring and autumn, and enabling us to state without much exaggeration that we have *Violets* all the year round.—E. B.

HERBACEOUS PHLOXES.

THESE were a leading feature among the cut flowers at the recent horticultural exhibition at Dundee. There were two or three classes for them, and they were shown in the form of large bold spikes bearing finely formed flowers, some very rich in colour. The *Phlox* is much grown for exhibition purposes in Scotland; therefore it was not to be wondered at that cut specimens were extensively shown, or that they were fine in character. They were staged in a somewhat close and confined space under a narrow canvas-covered annexe, and it was not until one stood close by them that they appreciated the sweet and grateful perfume which they emitted. We heard visitors exclaiming, What is it smells so sweetly? and they appeared surprised and a little disappointed when they were told it was given forth by the common, every-day, though charming, *Phloxes*.

There are two distinct types of the herbaceous *Phlox* cultivated in Scotland, one of which is called the *suffruticosa*, or early flowering section, dwarf in growth as well as early in bloom, and the *decussata*, a late flowering section, in which the varieties produce taller foliage, the stems throwing out lateral flower shoots towards the top, while they are much harder in constitution. The early flowering section appears to do best in cool and moist districts; the later flowering section flourish in our southern counties, and are more suited to warmer and drier soils. Though the two sections appear to possess much in common, they have yet essential differences, though these are less pronounced than they were by reason of the varieties of the two types having been crossed.

Really the varieties of both sections are of comparatively easy cultivation, requiring merely good, rich ordinary garden soil, and as they are perfectly hardy, they are well adapted for planting in beds or for isolating in the mixed border. In planting a bed or border there is no reason why the early and late varieties should not be planted alternately; by doing this a display of flower can be had from the beginning of June until the end of September. In order that this can be arranged, a selection of the best varieties in each section is given as follows: Early flowering—*Argus*, French white, fine form, and excellent spike; *Burns*, deep rosy purple, fine form; *Charles Downie*, dark rosy crimson, very dark eye, extra fine; *Colonel Flatters*, rosy purple, crimson-eyed, large and fine; *Countess of Galloway*, pure white, a lovely and richly fragrant variety; *Lady Musgrave*, also pure white, but distinct from the foregoing, very sweet-scented; *Luna*, white, splashed and shaded with rose; *Mauve Queen*, bright slate colour, perfect form, the flowers large and forming a very fine spike; *Miss E. Stephenson*, French white, slightly shaded with rose, fine spike; *Mrs. A. Fowler*, pure white, with a rich rosy pink eye; *Mrs. Hardy*, white, shaded with rose, finely formed flowers; *Mrs. W. Richards*, white, slightly shaded with purple, extra fine form, and very fine spike; *Perfection*, pure white, with pale rosy eye, very pretty; *Rosy Gem*, beautiful dark rose, extra fine form; and *Thomas Ormiston*, a shaded purple self, large and very fine.

Of the *decussata* or late flowering section, the following will be found a unique selection: *Alexander Shearer*, deep rosy scarlet, fine form and striking spike; *B. S. Williams*, bright rosy crimson, dark crimson eye, very fine; *Countess of Aberdeen*, very large, pure white, bright rosy crimson eye, one of the finest varieties yet raised;

James Galloway, shaded rosy scarlet, large crimson eye, *John Downie*, light shaded rosy crimson, changing to deep crimson, fine form; *John Stuart*, bright rosy crimson, yellow eye, fine and distinct; *Lady Belhaven*, pure white, bright rosy pink eye; *Lady Macdonald*, light rosy lilac, fine crimson eye, very handsome; *Malcolm Dunn*, light rosy peach, fine crimson eye, large and handsome; *Miss Stuart*, light rosy lilac, deep rose eye, perfect form, and very fine for exhibition; *Mrs. Ellice*, pure white, with a distinct rosy crimson eye, a fine show variety; *Mrs. France*, white, deep rose eye, extra fine; *Mrs. John Downie*, large pure white, extra large crimson eye, one of the very best; *Mrs. Kinghorn*, light rosy lilac, of fine form and quality; *Resplendens*, bright rosy scarlet, fine form and spike; and *Roi des Blanchés*, fine white. We may remark that the foregoing selections were made from the collection growing at Mr. John Downie's nursery, at Murrayfield, Edinburgh.

There is no reason why any lover of the *Phlox* should not grow a few seedlings. All the types seed pretty freely, and ripe seed can be gathered in autumn. As soon as possible afterwards the seed should be sown in pans or shallow boxes, using a fine light soil made up mainly of good loam, leaf-mould, and silver sand; these should be placed in a cold frame and the surface kept moist, and in due time the seeds will germinate, but the raiser must not be in a hurry or grow impatient. In course of time the plants will present themselves, some earlier and some later, and when they have grown sufficiently large to handle, they should be potted off until they are large enough to plant out in the open ground to flower.

R. D.

CRINUM MOOREANUM.

MR. POWELL's memory does not serve him well when he states (p. 252) that I told him his African *Crinum* was *C. conspicuum africanum*. I said that I had grown it years ago as *C. ornatum africanum*. He is also in error in saying that I told him *C. Mooreanum* was a cross from *C. amabile*, as I always considered *C. Mooreanum* to be the same as the variety gathered wild and sent to this country. The history of *C. Mooreanum* is singular, and furnishes an instance of how confusion in names arises. Over twenty years ago I had it as *C. ornatum africanum*, and a little later on I saw a quantity of it growing outdoors and blooming well with the late Mr. Sigismund Rucker, who gave me three of the bulbs, but so firmly were they fixed in the ground, that a pickaxe had to be used to get them up, and after all they were broken and died. Mr. Pilcher can bear me out in what I say. After a while I lost sight of the plant, and thought no more about it until Messrs. Jacob Makoy & Co. brought it forward as *C. Makoyanum*. I identified it with my old friend, but found on referring it to the Kew herbarium that it had also been sent there as *C. Macowani* or *C. Mackeni* (for it had got into gardens under both names). While the plant was under consideration I went one day into the temperate house at Kew and there found the identical plant, evidently an old inhabitant, and bearing on the label the name *C. ornatum var. africanum*, or *C. ornatum (S. Africa)*—I am not sure which. It was in full bloom, and so there was no mistaking it. Afterwards I learned that *C. Makoyanum* was considered to be the same as *C. Mooreanum*, and I gladly accepted the name for the whole batch, as *C. ornatum* has been applied to very dissimilar species. I have no hesitation in saying that the plant I knew as *C. ornatum africanum* (the one Mr. Rucker had), *C. Makoyanum*, *C. Mackeni*, and *C. Macowani* are all *C. Mooreanum*, and that that species is perfectly hardy if planted deep (say, 2 feet) in most places in Great Britain. There are different varieties varying slightly in tint and in the breadth of the petals, but they are all one and the same thing, and plants of it have been in this country many years. In proof of this I may say that the same week it first flowered under one of its new names, an immense plant of it, many years in this country, was sold at Stevens's as *C.*

ornatum africanum, so that name must have been recognised formerly in gardens.

JAMES O'BRIEN.

Statice Suwarowi.—I think Mr. Hovey (p. 180) is rather hard on this new plant. It is not, I admit, a striking plant, but it is quite equal to some other novelties I have tried. I grew my stock of this plant, four in a 7-inch pot, and each one produced spikes of flowers from 6 inches to 8 inches long, of a dark lilac colour; but it only remained a short time in good condition, and I am willing to admit it is one we can very well do without. Why has it been given such an ugly, unpronounceable name?—J. C. C.

Othonna cheirifolia.—Some one writing recently about this plant in THE GARDEN remarked that the second or specific name meant "Wallflower-leaved," and that the foliage of the *Othonna* did not much resemble that of a Wallflower. Neither does it. *Cheirifolia* is gardener's Greek, a badly formed word, meaning "with foliage like a hand." The beautiful glaucous foliage of the *Othonna* has a digitate, or hand-like appearance. *Cheirifolia*, from Greek *cheir*, a hand, and Latin *folium*, a leaf; *Cheiranthus*, Wallflower, from *cheir*, a hand, and *anthos*, a flower, both Greek. There is not much resemblance in the blossom of a Wallflower to a hand, and I do not know whence the name.—SALMONICEPS.

Mignonette seed.—I am surprised to learn from a short reply recently on the subject of Mignonette seed that it should be found difficult to obtain it true. If any grower of this plant for seed has several kinds and grows them near each other, of course confusion must result; but when, as I believe to be the case, most respectable growers for seed keep their stocks not only wide apart, but well "rogued," seed ought to be true, and indeed is. I grow only two kinds, and those the best, viz., Parsons' Giant White for outdoor culture—and a grand Mignonette it is for massing and the production of sprigs for cutting—and the giant red pyramidal form, such as is the most favoured by our market growers for pot culture. This latter is compact, erect, has large spikes of flower, and is deliciously scented.—D.

Silene Schafta.—When hardly a *Silene*, with the exception of the pretty native *S. maritima* and its double variety, is to be seen, *S. Schafta*, like a gem in the wilderness, brightens up dull places with its handsome and graceful cushions of wiry stems and little bright green leaves. Beginning about the end of July, it continues in flower until cut off by the early frosts, and as it grows in the open border with remarkable freedom, no more suitable plant could be used for edgings or near the fronts of borders. On the rockery a position near that of *Lychnis Lagasce* may be chosen for it, as it begins to flower just as the *Lychnis* is over, and thereby a succession of pretty rosy purple flowers may be kept up during the greater part of the summer and autumn. It may be readily increased by division of the roots or by cuttings.—K.

A noble hardy foliage plant (*Gunnera manicata*).—A specimen of this really magnificent Brazilian foliage plant seems to be quite at home, and with the slight protection of a heap of dead leaves piled over its crown in severe winters, quite hardy in Mr. Hoey's garden in the neighbourhood of Newry, Co. Down, in the north of Ireland. It is planted on the brink of a small pond, so that its roots can reach the water and drink their fill therefrom, while the crown of the plant is well above it and fully exposed to the sun. In this position (which seems to suit it exactly), and after about three years' occupation thereof, it has attained the following splendid and extraordinary dimensions: Number of leaves, sixteen; diameter of plant, 18 feet; diameter of largest leaf, close on 8 feet; height of leaf-stalk, rather over 8 feet, with four handsome fruiting spikes in the centre of the plant.—W. E. G.

Rudbeckia maxima.—This *Rudbeckia* is a noble plant, and one well worth a prominent

position in any garden. One fault, however, I must admit it has, and that is, it seldom develops perfectly formed flowers. Even in those that are best formed there are nearly always some few of the rays deficient. Apart, however, from floral value, its noble port, when well grown, is quite sufficient to recommend it. It grows generally from 6 feet to 8 feet high; its leaves, which are oval-shaped, are semi-perfoliate, and covered with a charming glaucous bloom; the root leaves are nearly of the same shape and borne on long stalks. Dry situations and tops of rockeries seem to be the best position for which this plant is fitted, and as it requires no attention, it ought soon to find its way into collections. It is propagated by offsets, which are given off freely—rarely by seeds, which seldom ripen.—K.

Cobæa scandens.—Some weeks ago a correspondent (H. O. Sulham, p. 152) drew attention to the value of *Eccremocarpos scaber* as an outdoor climber. If it succeeds with him I would suggest his trying the *Cobæa* next season as a companion to it. Seeds sown here in a cool stove in February last germinated very readily; the plants thus raised, when about 2 feet to 3 feet high, were planted against a south wall in May. The strongest, although it lost its leader and is now nearly 20 feet high, has many branches, and has been flowering for several weeks past. The blossoms are at first pale green, turning to rich purple in a day or two, while its foliage and habit are exceedingly graceful. It will, no doubt, be cut down by the first smart frost, but it can be so easily and cheaply replaced that that does not matter.—GREENWOOD.

Senecio pulcher.—I could not believe anyone possessing this would desire to be without it. I have always placed it in the foremost rank amongst hardy plants of recent introduction both for the size and rich colouring of the individual blooms, which remind one of some of the larger flowered *Mesembryanthemums*, and which neither *Pyrethrum* nor *Aster* can match. It has one great fault, however—drawback, if you like—which is rather derogatory to its use in humid districts. It has a great tendency to mould. Two or three close, foggy, autumnal days in succession cause the heads of inflorescence to perish often just when at their best. Having over and over again experienced this, I now grow this *Senecio* in pots, when on the first appearance of the enemy, or should weather set in likely to produce it, it is removed to a dryer atmosphere under glass where it can safely complete its blooming and be enjoyed to the last, a precaution the beautiful season which we are now enjoying has hitherto this year rendered unnecessary. I do not know where in was discovered, but I infer from this that it must be a native of some sunny, arid region.—J. M., *Charmouth, Dorset*.

Reseda fruticulosa.—I have been staying for a few days at Hornsea, on the seacoast of Holderness, and have been interested in a shrubby *Reseda* that is cultivated in gardens on the coast. I allude to *R. fruticulosa*, that has been by some wrongly included in our British flora. It is, like the *Mignonette*, mostly partial to the seacoast of the Mediterranean, affecting Europe, Asia, and Africa. It is, unfortunately, destitute of fragrance, or its cultivation would be more extended than it is. I have often thought that hybrid forms might be raised that would give us the shrubby growth of *R. fruticulosa* combined with the lowlier growth and fragrance of *R. odorata*. The glaucous divided leaves would also add a certain amount of beauty to the plant. The flowers, such as they are, are white, and the anthers red before expansion. Our two native species are lovers of a chalk or limestone soil. Our exotic species in cultivation are both lovers of a sandy formation. Another plant that I notice on rockeries in the seaside gardens is the *Artemisia maritima*. The gracefulness of the reflexed flower-spikes, just now in perfection, and the glaucous colour of its leaves make it a desirable foliage plant in our seaside gardens. I have not noticed it wild on the Yorkshire coast, though the oolite near Scarborough may possibly furnish us with examples of it. I know not. I

seem only to know it as frequenting our salt marshes in the south of England. I think it the most graceful of the tribe of the *Artemisias*.—PETER INCHBALD, F.L.S., *Hornsea, Yorkshire*.

Carnation layering knife.—I recently read in one of your contemporaries a statement to the effect that Mr. B. Simonite, the well-known Carnation and Picotee cultivator at Sheffield, had invented a knife for the purpose of layering "having an extremely narrow and thin blade with cutting edges on both sides and a fine needle-like point." Instead of inserting the knife immediately below the joint, cutting the stem half through, and then turning the knife to make the upward cut, he passes his knife through the centre of the stem an inch above the joint, the slits being made downwards to the required depth below the joint; the knife is then withdrawn and the horizontal cut made in the usual manner. I do not know how long Mr. Simonite has had this style of knife in use, but it is not new to layerers of Carnations and Picotees. Thirty years ago I was with Mr. C. Turner at Slough, and in those days the task of layering was heavy and prolonged work. One of those engaged in it was Thomas Daniels, who used a knife similar to that described by Mr. Simonite, piercing the stem through with it, and cutting downwards, as in Mr. Simonite's case. I do not know how long Daniels had used this knife, but I think it was made according to his own design. He was a most expeditious and successful layerer. I can speak with confidence as to his work, as for two, if not for three, successive years I trimmed and got ready the plants for him, and while employed in the Royal Nursery Daniels always did the principal part of the layering.—R. DEAN, *Ealing*.

Solanum jasminoides.—This is a fine creeper for outside walls; where it has a suitable position it grows very fast, and covers a large space in a very short time. Nearly four years ago I planted here a plant of it at the foot of the wall of the south front of the mansion in a prepared border, in soil consisting of loam, manure, and lime rubbish in nearly equal parts. The border was well drained by the excavations necessary for the foundations of the house. The plant commenced to grow rapidly. The first winter we mulched the roots with short manure, and covered the top with a mat, thinking it was not sufficiently hardy to withstand frost; since then it has not been covered in any way. The mild winters which we have lately had have been all in its favour, but I do not think that it is hardy enough to withstand severe frost without protection. It grew very fast; indeed, since that time it has scarcely ever ceased to grow, and is nearly always in bloom, except, perhaps, during a month or two in the middle of winter. It is now 28 feet high, and covers a wall 20 feet wide. It is one mass of bloom, and has been so all the summer. It does not require much pruning; the shoots (except the leaders, which are nailed to the wall as fast as they grow) are allowed to hang loosely, a condition in which they look much better than when all are fastened tightly to the wall. It has been thoroughly well watered during the summer with liquid manure, and well washed with clear water applied with the garden engine to keep down red spider, to the attacks of which it is liable when allowed to become dry at the roots in a hot season.—E. MOLYNEUX, *Swanmore Park, Hampshire*.

SHORT NOTES.—FLOWER.

Dahlias seeding without blooming.—This season dozens of buds of single Dahlias here have failed to open, but have turned brown, and on examination are found to contain abundance of apparently good seed. How has the fertilisation taken place? I should be glad to know if others have noticed this somewhat singular fact.—GREENWOOD.

Geranium phæum.—I see in THE GARDEN of the 20th inst. that "Salmoniceps" speaks in "Late Notes" of this *Geranium* as a "doubtful British plant." I may state for his qualification that it is now existing in an absolutely wild state in Norfolk, and was discovered there in 1883 by my wife, who pointed it out to me. If he is a real lover of English botany he will be pleased to hear this.—DE B. CRAWSHAY, *Rosefield, Sevenoaks*.

INDOOR GARDEN.

THE PALM HOUSE AT KEW.

IN THE GARDEN of the 6th inst. there is an article headed "The Palm House at Kew," in which it is said that "great improvements have been carried out in the Palm house, but that no good results will accrue from any efforts in this direction until the perforated iron floor on which the plants stand is removed." This is perfectly correct, and I need not say with what vexation, even horror, I learned that I, as curator, was to grow tropical plants on an iron floor, and to be "responsible for their good cultivation." It was not until four years after its commencement that the house was ready to receive the plants. On going into it with the foreman (July, 1848), in order to arrange for the placing of the plants, the heat was almost unbearable, which need not be wondered at, for on looking up nothing was to be seen but massive iron rafters, girders, gallery, pillars, which, with the iron floor on which we stood and the smooth stone shelves and paths and glazed roof, readily accounted for the excessive heat. The whole appeared to me more like a dockyard smithy or iron-roofed railway station than a place to grow exotic plants in. However, there it was, a fine looking architectural structure, erected at considerable cost, in which to grow the "princes of the vegetable kingdom."

The first put in were the two large plants of *Sabal umbraculifera*, each in its wooden box weighing 17 tons. The other Palms and general collection of stove plants followed, but as the area which they occupied in the old houses was only about half the area of the centre division of the Palm house, they did but little towards filling it, and it was not for another year that plants were to be seen in the wings. In 1851 the house began to assume a full appearance, and in 1854 Sir W. Hooker says: "The Palm stove was never more beautiful than at the present moment, and so rapid has been the growth of some of the trees, that we have been obliged to remove them from their high tubs and sink them in the ground." This sinking in the ground was consequent on the tubs and boxes in which they were grown requiring to be renewed, as their renewal would have been a great expense occurring periodically, and the boxes were not very ornamental. I suggested to Sir W. Hooker that, to save this expense, it would be better to sink the whole of the large Palms in the centre division of the house, a suggestion in which he concurred. This, however, could not be done without altering the position of the hot-water pipes, but this was sanctioned, and it was with great pleasure that I saw two-thirds of the iron floor of the centre division disappear. This gave us space for six beds of soil, three on each side of the centre pathway in which the large Palms were planted. This, it is said in the article just alluded to, "is the only spot where the plants can be seen growing as luxuriantly as in the Tropics." Having succeeded thus far with the centre, I determined to try and get the wings served in the same manner, but to do this I found it would require a considerable sum of money, so I did not press it.

The ungenial atmosphere caused by the masses of iron and stone was not, however, the only drawback to the good health of the plants; they sometimes had to endure a lower temperature than was good for them; this was consequent on the furnace rooms being flooded every winter, even sometimes to so great a degree as to threaten the extinction of the fires, which being thus deprived of sufficient air imparted but little heat to the hot-water pipes. This was due to the architect choosing for the site of the Palm house, the lowest ground in the parish of Kew, which in primeval times consisted of a series of lagoons connected with the Thames which George III. converted into a lake which, having been neglected and partially filled up, becomes a quagmire in winter, but the history of this and the evils that followed I leave for the present. With all these drawbacks we never-

theless succeeded in fruiting the Mango, Guava, Litchi, Granadilla, Malay Rose-apple, Marmalade Plum, and Bananas in abundance, some bunches weighing 60 lbs., and "Palm trees now grow where painted Britons were wont to snare waterfowls." —J. SMITH, *Ex-curator of Royal Gardens, Kew.*

THE GINGER PLANT.

(ZINGIBER OFFICINALE.)

EVERYBODY is acquainted with the rhizomes of this plant, which in a dried state are used medicinally and when green as a condiment. The preserved ginger of the shops is prepared from carefully selected young rhizomes, washed and scraped, and then preserved in jars with syrup. As in the case of several other plants of famous economical repute, the native country of the Ginger plant is not known. Stranger still, the flowers are rarely or never produced under cultivation, although the plant has been a garden inmate for centuries. In the Tropics, however, flowers are produced and, the character of these is shown in the accompanying woodcut. Like the Cardamoms (*Elettaria*), the Grains of Paradise (*Amomum Meleguetta*), the Turmeric (*Curcuma longa*), and several other members of the Ginger family, the leaves of the Ginger plant have a strong aromatic odour when bruised, and for this character alone these

Ginger plant (*Zingiber officinale*.)

plants are deserving of a place in gardens. The Ginger plant is easily grown in a moist, warm house. The leaves are deciduous, and whilst the plant is at rest it should be placed on a shelf or under a stage in a warm house and be kept dry. In the spring the rhizomes may be shaken out of the old soil and repotted in any ordinary garden soil. The stock may easily be increased by dividing the rhizomes. B.

VALLOTA PURPUREA FROM SEED.

"VERONICA," who thinks that good Vallota seeds have never been gathered in this country, will be interested to learn that I have raised quite a number of young plants from seed. It is natural to suppose that an autumn-blooming plant like the Scarborough Lily should fail in maturing seeds, as in a general way it goes out of flower just when the power of the sun comes to a low ebb. But the absence of sun, and even of warmth, is no hindrance to the perfect ripening, for they come to perfection in a cool house during the winter months, the capsules opening and the seeds dropping about the middle of March. With the exception of *Cyclamen hederifolium*, I know of no seed that ripens at such a low temperature. Of course, if the plants are dried off after blooming, or if they are placed in a dark position, the seeds will not come good; they must have the benefit of the full light and be watered now and then, but only just enough to

keep the foliage fresh. The great important point, however, seems to be to sow the seed as soon as ripe; it should be committed to the soil within a day or two of the opening of the capsule, and then it comes through in about three weeks if sown in gentle heat. I once kept some seed twelve months, but none of it germinated, and last spring I gathered quite an ounce of good seed, but I did not sow it until all was ripe, so that some of it laid nearly a month and only a small portion germinated, probably the contents of the last pods that ripened. It may, therefore, be taken for a fact that Vallota seed loses vitality every hour that it remains out of the soil. My seedlings were raised about three years ago, and I am now sorry that I did not care for them as I should have done. Had I grown them on freely, they would have some of them bloomed by now, but I allowed them to remain two seasons in the seed-pan, so that they will yet need another year's growth before I shall have the opportunity of seeing them flower. Can "Veronica" tell me what is the difference between the varieties major and eximia, or are they identical? and what is the exact difference between the latter and the type? I have been trying to get eximia for some time, thinking that I possessed the normal form only, but as when procured it turns out to be identical with my own stock, I am coming to the conclusion that I have already what I have been trying to get, and that I do not know the typical form of Vallota purpurea. Has this latter no white eye at all? If so, I have eximia, as all my flowers have a more or less white centre. Information on this point would oblige. J. CORNHILL.

BRUGMANSIA SUAVEOLENS.

ALTHOUGH the flowering period of this plant is limited, it must be classed amongst the finest of our greenhouse plants that assume tree-like proportions. *B. Knightii* is common in many gardens, and is used effectively outside as a sub-tropical plant. Good specimens of *B. sanguinea* may also be met with sometimes in greenhouses, but *B. suaveolens* seems comparatively scarce. This is to be regretted, as its flowers are the most beautiful of all. They are pure white, and in the evening very fragrant. The corolla on a fully developed flower extends to a length of 9 inches; it has a wavy margin and measures at this point 6 inches across. The crop of flowers seems to open nearly all at once, and just for a few days the plant has a fine appearance. Successional flowers are not produced in similar profusion by this species, as in the case of *B. sanguinea*. Brugmansias require space and a rather lofty house to show them off well, as large and old-established plants grow to a height of 12 feet or more, even though cut close in annually. The roots should be restricted in some way in order to keep them dry when at rest in winter, and also to ensure a free-flowering habit. If grown in large pots, they may be removed from the house altogether after flowering, but this is not always practicable with large plants. Plenty of water and liquid manure are requisite when growth is active. *B. suaveolens* is sometimes spoken of as being a shy flowerer. This term may be applied to it regarding a succession of flowers, but it can hardly be considered shy when the first batch is open. Miss North in her celebrated collection of paintings has this plant, under the old name of *Datura arborea*, represented in four different pictures painted in as many different places, all fair indications of what its beauty deserved when seen in warmer climates than ours outside. Two flowers and a green fruit are shown in the collection from Brazil. These flowers do not appear much larger than those on plants grown here, but I have not seen any fruits produced in this country. Secondly to be noticed is a part of a plant in flower growing on a sloping bank in a beautiful little valley at Gordontown, Jamaica. The third picture, a view from a waterfall at Kamboddy, Ceylon, represents *B. suaveolens* growing most freely and flowering in the greatest profusion on both sides of the water, having large Bananas for a background. Fourthly, it is shown backed up by Palms near some mat houses at Bandong, Java. B.

suaveolens is a native of Tropical America, and is now in flower. BETA.

Pelargonium Volonte Nationale.—This beautiful new variety was recently shown by Mr. Perkins, of Leamington, in a remarkably fine stand of cut flowers set up at the Stratford-on-Avon show. It is one of the several very fine decorative Pelargoniums raised by Mons. Victor Lemoine, of Nancy, and unquestionably one of the best of the type yet introduced. The flowers are white, with a salmon-pink blotch on each segment, the trusses very large, the individual blossoms stout and well formed, and the habit of growth all that can be desired.—R. D.

Eucomis punctata, although not a showy plant, deserves a place in the greenhouse, as its foliage is prettily mottled, and its large spikes of bloom last a long time in perfection. I lately saw some massive spikes of it that had been used for indoor decoration for a month, and which were still in good condition. The perfume is very delicate and pleasant. Good large plants of it may be grown in 6-inch pots; a mixture consisting of a good sound loam and a little rotten manure and sand suits it well, and a shelf near the glass in a cool house to keep the foliage sturdy is just the place for it.—J. G., *Hants.*

WORK DONE IN WEEK ENDING SEPT. 24.

SEPTEMBER 18.—To-day the thermometer again registered 81° in the shade, and wasps, apparently encouraged by the heat, came forth in numbers as great as they did a month since, and this in spite of every devisable means of extermination that we can think of. Cyanide of potassium we have found most effectual in destroying their nests, but the puzzle is to find them, and in despair we have to do the next best thing, and that is to gather the fruit, for they attack all sorts, ripe and unripe alike. Gathered all Apples that were fit, also Pears, and Peaches; the latter are the best crops, and finer fruit than we have had for at least ten years. So much for a hot summer, which in the interest of horticulture, and agriculture, too, it is hoped may be repeated next and every year. Potted succession Pines and partially renewed the plunging material, leaves and litter, in the proportion of about five of leaves to one of litter; thus heating is assured (by use of litter), and there is no danger of overheating in such a bulk of old leaves, which retain a more equable warmth for a longer period than any other material we have used. Hot-water pipes as bottom-heat for Pine-growing I have never known to be satisfactory, and certainly I would never (from choice) adopt such a plan of heating.

SEPTEMBER 19.—This second summer will give us no quarter or license ament the question of weed destruction, for never were conditions more favourable to getting rid of them. Hoeing has been our only doings in the kitchen garden. Winter Spinach, Broccoli, Lettuce, Asparagus, and, in fact, all and every plot where there were weeds, or likely to be some (for we always wait to see them) were hoed. Apart from weed destroying, the stirring of the surface soil is of great benefit to the crops, and perhaps more so in unkindly, stiff soils than in the sandy loam that we have to deal with. The mixed flower borders are now as gay as they were in June, of course with different kinds of plants, but none the less beautiful, except it be that certain species (Michaelmas Daisies to wit) remind one that winter is near, and after such a delightful summer the feeling that it is all but ended is all the more acute. However, regrets are useless, and we must try to lengthen out the flower season by tying up to prevent injury from high winds and heavy rains. *Pyrethrum uliginosum*, several kinds of perennial *Helianthus* (Sunflowers), *Asters* (Michaelmas Daisies), *Solidagos* (Golden Rods) are amongst the kinds of plants that have been attended to, together with weeding amongst dwarfier growing kinds and cutting off decayed flowers from others. Indoors we planted

winter Cucumbers; a hot-water tank supplies the bottom-heat, and the top-heat can be regulated at will; 70° by night is our minimum temperature. Late Melons have set their fruit perfectly, and are now being pushed on by increased heat at night, that sunshine may have a share in finishing off the fruit, as rarely indeed is a Melon eatable when ripened without the aid of sunshine. Earlier fruit have had net supports attached, that is, those growing on a trellis in houses; no supports for frame culture are needed, except the boards on which the fruit is laid. A small pebble placed on the board at each side of the fruit is sometimes desirable to steady the fruit and prevent its breaking off at the handle before it is thoroughly ripe. Weeded and removed runners from pot Strawberries, and gave the plants more space that sun and air may harden the crowns. Cuttings of various kinds for flower garden purposes have been overhauled, those struck being put into cold frames, and others not so advanced have had their decaying leaves removed and have been replunged in warmth. All Grapes are now quite ripe, and full ventilation—at least as far as the exclusion of wasps will allow—is now given them, with just sufficient warmth in the pipes at night to keep the atmosphere buoyant, that there may be no condensation of moisture on the fruit. Late Muscats—inside borders—were watered a few days ago, and being barely ripe, I note a few of the berries have cracked at the foot-stalks, and in every instance the affected berries are on the greenest and most unripe bunches. A year or two ago I noted precisely the same occurrence, and the following year on the Grapes approaching maturity, though the border really needed water, the application of it was deferred till the fruit was quite ripe, and there was no cracking. This year the borders seeming very dry, I was tempted to water them, and the result has been a recurrence of cracking. Moral: Do not water when the Grapes are just finishing their last swelling, but defer it till the berries are full sized and the skins hard.

SEPTEMBER 20.—The usual weekly round of cleaning, scrubbing, and re-arrangement of plants in houses to-day included the housing of Poinsettias that have hitherto been grown in a cold pit. Pine stove and Melon houses are now their quarters, and right well they do in the temperature that has to be maintained for succession Pines, and for wintering such plants as *Iresines*, *Coleus*, and *Alternantheras* that the Melon houses are devoted to in winter. A little weak manure water is given them on alternate days, and syringing overhead when shutting up the houses in the afternoon. *Stephanotis* and small *Crotons* that we use as table plants, being dirty through soft scale, were washed with a weak solution of paraffin, which is a rare remedy for every description of parasite that plant life is afflicted with. It should be used—as to proportion—according to the nature of the plants to be operated on; as a rule soft-wooded plants should not have it stronger than a quarter of a pint to two gallons of water, but double that strength is not too great for hard-wooded plants. Flower, terrace garden in particular, has occupied a great part of our time to-day. Pelargoniums, *Calceolarias*, *Verbenas*, and *Lobelias* have been freed of bad and seeding flowers in full assurance that if the weather continues so fine they will repay our labour by renewed brightness, which has lately got somewhat faded. Carpeting plants, so-called, are uncommonly bright still, and continue to require pinchings and clippings to keep them in bounds; trailing plants depending from vases and baskets have been picked over, and some of the *Tropeolums* that had reached the ground and were injuring the Grass were shortened back, much to the improved appearance of the vases. The various kinds of Ivy-leaved Pelargoniums are by far the best droppers and need the least labour to keep in form; and though for variety's sake it may be desirable to use *Tropeolums* and other strong growers, they should be few in number, and here in future they shall be of a very limited quantity indeed. The clipping of Grass edgings of both beds and walks throughout the whole of the garden, also the mowing of verges

and sweeping up of coach roads in the immediate vicinity of the mansion, completed to-day's work.

SEPTEMBER 22.—No real work done, or, at any rate, none that is likely to be a financial success, for sweeping up leaves, however valuable for certain purposes they—the leaves—may be, does not pay, and this has been very nearly all the work our outside hands have done. But neatness counts for something, as without that commodity gardening would be a sorry calling, and therefore, as usual, we tidy up, and grumble that our other work is being neglected, but which with patience will have its turn. Prospectively we have sundry jobs of planting and transplanting of shrubs on hand, and had hoped to have done something to-day towards preparation of soil for the work, hence the grumble. *Chrysanthemums* have had more tying and disbudding, and are now given liquid manure daily, and so are Pelargoniums in pots for winter flowering; these are still kept in cold frames, and they have full ventilation. The flower-buds have hitherto been picked off as soon as they appeared, but now they will be allowed to flower. All the double varieties are excellent for cut-flower purposes the winter through, but the flowers of the single varieties drop so quickly as to render them almost useless for this purpose. Top-dressed spring-planted Cucumbers, and well soaked them with warm water strongly impregnated with soot, our mode of manufacture of this plant stimulant being the simple one of placing a coarse sack filled with soot in a tank of water. We find it an excellent winter manure for Cucumbers, *Primulas*, *Cinerarias*, and winter-flowering Pelargoniums.

SEPTEMBER 23.—Onions have been housed to-day, dirt and loose skins being rubbed off—not peeled—and the tops cut off to within an inch of the crowns of the bulbs. They are laid on the floors under the side shelves of the fruit room, and having been thoroughly dried there is but little smell from them—indeed, none a fortnight after the time of housing—but it is necessary to keep the ventilators fully open for a few days after storing. Exhausted plots of Peas and Runner Beans are being cleared away; the former have been the most wretched crops we have ever had. Wireworm, drought, and, I think, bad seed must all be credited with a share as to causes of failure, for it certainly could not be the ground, as that was trenched deeply and heavily manured. The ground cleared, manure will be wheeled on at the first available opportunity, then trenching or deep digging, as each plot requires, will be done at odd times when other work is not pressing, a plan of working that we have found of great convenience, as when one wishes to be away for a day, or is likely to be engaged in another part of the garden for the greater part of the day, then it is that foresight as to long jobs is rewarded by feeling that, though absent, the men are not likely to be out of a job. Being very dry, and therefore comfortable to work amongst, the latest planting of Brussels Sprouts were cleared of their underneath large leaves, to expose the stems to the light and prevent rotting of Sprouts, which would surely occur were not all unnecessary foliage pulled off. A second earthing up was also deemed necessary, as the Sprouts have grown so tall that without additional soil support the first gale would lay them low. Autumn Giant Cauliflower is now in, and should warm weather continue there will shortly be a glut of it; hence we shall take the precaution to lift all surplus plants as ready, and heel them in at the foot of a north wall, watering them when first put there, but never afterwards; by this means we shall lengthen out the supplies considerably.

SEPTEMBER 24.—Weed cutting round side of lake and mowing the banks and under the trees for the last time this season. Rock and root works planted with dwarf shrubs and some few alpine, having got very untidy through the fallen leaves of *Rhododendrons* that top the banks, have been cleared out, the alleys and walks weeded, and the principal walks leading to this garden have also been put in trim order by shearing of verges and weeding, our invariable rule being that when

a certain part of the garden is extra well done up, all other parts in its immediate vicinity shall have the like treatment, a method of working that oftentimes compels us to do work that would otherwise be deferred indefinitely, and occasionally, no doubt, to one's discredit. Indoor work is now at the slackest point, and plant cleaning, washing of pots, and preparing soils for potting, and top-dressing of borders are being done. The ventilation of vineries containing ripe Grapes is just now our most particular work—work that I find it very difficult to get young men to do with that judgment that its importance demands. I sometimes think such carelessness arises from the generally prevalent notion that once the Grapes are ripe, so long as rain is kept off the fruit, it is no matter how or when ventilation is given—an error of judgment that can only be met by inculcating the true doctrine, that the whole of good culture consists quite as much in long preservation of the fruit in good condition as in finishing it off properly. I say, give air abundantly, but always with due regard to atmospheric conditions, the points to aim at being to exclude damp, sudden chills, and irregular temperatures. We never discontinue fires for ripe Grapes, as some do, in autumn, as we always like a little warmth in the pipes, but only a little, to enable us to keep the ventilators slightly open all night.

HANTS.

ORCHIDS.

SEPTEMBER ORCHIDS.

EVERY good Orchid that habitually flowers in September and October is valuable, inasmuch as these months are the lowest in the scale of the Orchid flower calendar, and, moreover, Orchid flowers are then most in demand in country houses. One would scarcely fancy that the lowest ebb of the Orchid flowering season is reached in walking through the various houses at the Royal Exotic Nursery, Chelsea, at the present time, as almost every house is gay with bloom of some class or another. Besides a host of the commoner kinds, which may be seen in flower at this season in any good Orchid collection, we singled out the following as worthy of note. The choicest of all is the rare little *Cypripedium Fairieanum*, which we were pleased to find not only flourishing admirably, but represented by numerous plants. It seems that at length Messrs. Veitch's Orchid growers have hit upon the requirements of this little gem among Lady's Slippers. To those not acquainted with the flowers of this species it may be best described as having medium-sized flowers with deflexed lateral sepals of a greenish white tinge, with the dorsal or upper sepal beautifully netted and pencilled with plum-purple. It is very dwarf in growth, the whole plant being not more than 9 inches high. Besides this Lady's Slipper in flower there are numerous others, including some of the finest hybrid varieties that have originated here. For instance, there are the handsome *C. Schroederæ*, *C. grande*, *C. selligerum majus*, *C. Ashburtoniæ*, *C. cernanum superbum*, which by the way is a much finer plant than the type, the colour being brighter, particularly on the dorsal sepal. A new form of *C. cardinale* has just expanded its flowers for the first time. It is, we consider, the clearest coloured of all the hybrids, and more nearly resembles the hardy North American *C. spectabile* than any Lady's Slipper we have seen. This new form is unquestionably a great gain, and should it be as vigorous and floriferous as *C. Sedeni*, one of the same race, it will indeed be a valuable garden plant.

In the capacious new Cattleya house may be seen the various forms of *Lælia elegans* and its ally or variety, *L. Schilleriana*, which is, whatever relation it may stand to *L. elegans*, a most lovely Orchid and particularly valuable, as flowering at this season. *Cattleya speciosissima* has been particularly fine this season, perhaps due to the hot summer; when seen in perfection, as here, it is second to no other *Cattleya*. Those fond of the

uncommon or less showy kinds may like to see *C. bicolor* in bloom, and a variety of it having the lip half white, half magenta. *C. maxima*, too, *C. Gaskelliana*, and *C. Eldorado* and its variety *Wallisi* contribute to the display.

ONCIDIUM JONESIANUM will no doubt become popular, particularly if it continues to improve as it has done since it was first flowered. Here may be seen several flowering specimens of it, and one in particular has a spike carrying about a dozen flowers. These are highly attractive and distinct from all other Orchids in gardens. The flowers have large flat lips of snowy whiteness and sepals copiously spotted on a light ground. The leaves are fleshy and cylindrical. No one can mistake it for any other Orchid when once they have seen it in bloom. It is grown by Messrs. Veitch in an intermediate house on suspended blocks. We shall probably hear a deal about this Orchid in course of time.

Of quite a different aspect are the numerous plants of *O. varicosum*, which by the way varies considerably as regards the size of the flowers; one variety we noticed with the lips of the flowers $1\frac{1}{2}$ inches across, a beautiful clear chrome-yellow. The stem bore a wide-spreading panicle of blossoms, looking like a swarm of golden butterflies. Among the *Aerides* the showiest is *A. Huttoni*, a pretty species when seen with long pendulous spikes thickly set with magenta flowers; *A. suavisimum* and others also give a glowing colour to the East Indian houses. Other noteworthy flowering Orchids are *Cœlogyne Massangeana*, which seems to be always in bloom; *Barkeria spectabilis*, one of the prettiest of Mexican Orchids. Those who would like to see what may be well considered the finest specimen in the country of *Phalenopsis Schilleriana* can do so here. The specimen is indeed a grand one, having two breaks each furnished with half a dozen leaves over a foot in length and 6 inches broad, and of that thick firm texture which alone indicates rude health. It is just now developing some thick spikes which doubtless will carry an unusually large number of flowers. *P. amabilis*, *grandiflora* and the pretty *P. violacea* are plentifully in flower.

The Dove plant.—As we are so often asked about the Dove Orchid (*Peristeria elata*), the *El Spirito Santo* of the Spaniards, we might mention that it is to be seen in flower in Mr. Bull's nursery at Chelsea. From its ostrich egg-like bulbs it produces tall, stout spikes, terminated by numerous wax-like white flowers, the column of which resembles the conventional dove of the painters of sacred subjects.

Vanda tricolor Warneri.—Flowers of this superb and rare variety come to us from Mr. Crawshaw, of Rosefield, Sevenoaks, who justly considers it a gem among Vandas. The distinctness lies in the colour, that of the sepals being blotches and spots of cinnamon-red and chestnut-brown on a creamy white ground, while the labelum is of a rich magenta-purple. This beautiful variety is figured in Warner's "Orchidaceous Plants."

Autumn flowering Orchids.—In addition to the above notes on Orchids in flower at Mr. Bull's nursery, the following among others may also be seen there: *Cœlogyne corrugata*, a pretty species, not often seen in flower on account of its being such a shy bloomer—it is in the way of *C. oculata*; *Angræcum Ellisii*, the rare species, with long pendulous spikes of ivory-white flowers; *Vanda Lowi*, a fine specimen, just expanding its buds; *Epidendrum inosum*, a very distinct species, at first sight reminding one of *Oncidium Edwardi*, and almost as sweet scented; *Oncidium obryzatum dasystalix*, a distinct variety of this well-known species; *Zygopetalum maxillare pictum*, remarkable for the conspicuous blotches on the sepals and lips, rendering it quite different from the type; *Masdevallia inflata*, no great beauty, but interesting as being a new and very rare species; it has bronzy flowers, cylindrical and tailed. Among commoner species may be found *M. trochilus*, *M. bella*, *Wagneri*, *Dendrobium*

superbiens, *Dearei*, *Cypripedium Haynaldianum*, *Pilumna fragrans*; and among *Cattleyas*, *C. Gaskelliana*, *Eldorado*, *Wallisi*, *maxima*, *Harrisoniæ*. We must also mention a new little *Aerides ornithorhynchum*, quite a gem, with tiny flowers with prominent magenta beaks, suspended on slender drooping spikes. It is said to be quite new.

Miltonia candida grandiflora.—The ordinary form of this Brazilian Orchid is handsome enough, but the *grandiflora* variety quite eclipses it; indeed, it is among the handsomest of Orchids, particularly among those flowering at the present time. The flowers, produced on erect spikes, are fully 4 inches across; the sepals and petals are blotched and mottled with brown, while the large shell-like lip is pure white marked interiorly with plum-purple. Some fine flowering specimens of it now adorn one of Mr. Bull's Orchid houses in company with other species of *Miltonia*, such as *M. Regnelli* and the *purpurea* variety, which is handsome and distinct, *M. spectabilis*, *M. Clowesi* and major, and *M. Moreliana*, of which the form *atro-rubens* is an exceedingly beautiful Orchid, with port-wine-coloured sepals and a large lip of purplish rose delicately pencilled and veined.

Odontoglossum blepharicanthum.—This is a new addition to the already long list of *Odontoglossums*, but it is welcome, inasmuch as it is quite a gem in its way. To intelligibly describe it one must liken it to the little *O. blandum*, to which it is seemingly nearly allied, though possessing marked distinctions. The flowers are about the size of those of *O. gloriosum*, copiously spotted like *blandum* and *nævium*, but with quite a distinctly shaped lip. The spike is congested, and the whole plant, spike and all, does not exceed 6 inches or 9 inches. The white and yellow lip adds to the attractiveness of the flower. This new species has just flowered for the first time in Mr. Bull's nursery, where also may be seen numerous other noteworthy *Odontoglossums* in bloom, notwithstanding the fact that September is the duldest month for Orchid flowers. The favourite old *O. grande* is flowering profusely; no species is so showy, though one of the oldest known. Another extremely beautiful *Odontoglossum* is the autumn-flowering variety of *O. vexillarium* named *rubellum*. It may be at once distinguished by the intensity of the colour of the flowers, which are, moreover, smaller than the summer-flowering varieties. This autumn form is extremely valuable, flowering, as it does, just when there is a scarcity of Orchid bloom. There can be no mistake about the distinctiveness of the variety so far as its flowering season goes, as there is not one out of the hundreds of specimens of the type in this nursery that are flowering, or even showing spikes. Other *Odontoglossums* include *O. Uro-Skinneri superbum*, *O. Rossi majus*, besides numbers of forms of *O. crispum*, which seems to be in flower here the whole year through.

Vallota purpurea.—Excellent examples of this plant were shown at the recent Dundee exhibition, and as prizes were offered for specimen plants, good competition was the result. The plants were large and carried several flower-stems, bearing very good and well-coloured blossoms. It was observed that the petals of some were stouter, more rounded, and better coloured than others. It seemed as if the plants had been established in their pots for some time, but they had been well looked after generally. Such specimens are fine subjects for conservatory decoration at this season of the year; but, popular as the plant is and easily cultivated, it is surprising how many gardens one may go into and find no trace of this showy *Amaryllid*.—R. D.

Lagerstroemia indica.—At a recent horticultural exhibition on a large scale, held at Stratford-on-Avon, a remarkably fine example of this charming plant was shown by Mr. Coys, The Gardens, Newbold Revel, Rugby. The specimen in question (pot and all) stood about 7 feet in height; it had a stout main stem, from which had

sprung numerous lateral branches, each of which bore large terminal panicles of lovely delicate pink or lively flesh-coloured flowers. It was one of the finest and most successfully grown and flowered examples of this Chinese plant I had ever seen, the panicles of flowers being distributed all over the plant, and all in a perfect stage of development. What a perfect stranger to many of the gardeners present this old plant appeared to be was also noticeable.—D.

SOCIETIES.

ROYAL HORTICULTURAL FRUIT AND VEGETABLE SHOW.

SEPT. 23, 24.

In every respect this was a first-rate exhibition and certainly one of the most remarkable of the series of fruit and vegetable shows held here this season, especially as regards the uniformly high quality of the produce exhibited. It was not a very large show, but throughout there was scarcely an inferior exhibit, and it is doubtful if the show of Grapes which formed the special feature has ever been surpassed as a whole. It was, indeed, a representative gathering of the most prominent among southern Grape growers, the prizes offered being sufficiently high to attract even the largest of them. In the various classes there were several unsurpassable bunches remarkable both for large size and high finish. The Peaches, Pears, and Apples were likewise excellent and numerous, and the vegetables, though fewer than we expected, have rarely been of finer quality; in short, the whole show was altogether a representative competition among some of the best gardeners in the country.

Grape classes.

For a collection of ten (six black and four white) kinds, three prizes, £10, £6, and £4, were offered, and though the number of kinds stipulated was large, even for the most extensive gardens to produce, there were, nevertheless, four competitors. After a good deal of deliberation the judges selected the collection from Lord Eversley's garden at Heckfield Place as the best, and certainly the examples shown by Mr. Wildsmith were of superlative merit. His best bunches were of Alnwick Seedling, Golden Queen, Black Alicante, Lady Downes, and Muscat of Alexandria; the rest of the sorts were Black Hamburg, Mrs. Pearson, Madresfield Court, White Tokay, and Gros Maroc, the latter particularly good. The majority of these were faultless, both as regards size and high finish. The Rev. Walter Sneyd's garden at Keele Hall furnished the second collection. This also was first-rate, the sorts being Gros Colmar, Mrs. Pearson, Muscat Hamburg, Black Hamburg, Golden Queen, Lady Downes, Buckland Sweetwater, Black Alicante, and Madresfield Court. The third collection, from Gunnersbury Park, included excellent examples of Alnwick, Gros Maroc, Madresfield Court, Foster's Buckland Sweetwater, and Black Hamburg. The other collection was from Messrs. Lane, of Berkhamstead, whose nurseries have so long been famous for high class Grape culture, though handicapped as they are with private gardeners.

Two collections only of five varieties were shown. The first of these came from the Duke of Northumberland's garden at Syon House, and by it Mr. Woodbridge still maintains his position as a skilful Grape grower. It would be difficult to show a finer set of five kinds than these were. The most noteworthy were the Madresfield Court and Muscat Hamburg, with both of which Mr. Woodbridge seems to be particularly successful. His other sorts were Muscat of Alexandria, Lady Downes, and some huge bunches of Trebbiano. His competitor was Lord Heytesbury's gardener, Mr. Horsefield, whose display was highly creditable. He had some uncommonly fine Foster's, large and well-finished Trebbiano, Chatsworth Seedling (the only bunches in the show of this variety), Muscat Hamburg, and Alicante. Then followed eight classes devoted to particular sorts, three bunches of each. Among nine competitors for the

MUSCAT OF ALEXANDRIA prizes the Marquis of Bath's gardener at Longleat (Mr. W. Pratt) achieved wonderful success, as his bunches were not only about twice the size of those of any of his rivals, but were moreover as perfect as possible, having regard to the enormous mass of berries; his biggest bunch could not have weighed far short of 6 pounds or 7 pounds, and the other two were scarcely less. The vineries at Longleat are evidently in fine order, as Mr. Pratt was second to none in all the classes he showed. The Muscats which took the second and third prizes were perhaps better coloured than the Longleat monsters, but of course this point would not outweigh the uncommon size of bunch, which, as every gardener knows, is a most difficult matter to produce in a Muscat.

BLACK HAMBURG was shown by six, but among the whole eighteen bunches shown there were none particularly remarkable. Mr. Pratt's first prize set were certainly large, but they lacked that perfect finish which is always looked for in first-rate Black Hamburgs. The second and third sets from Elvaston and Gunnersbury Park respectively were only of moderate size, but the colour was good.

GROS COLMAR was shown by four only; the best from Mr. Sewell's garden, in Epping Forest, were certainly a credit to his gardener (Mr. A. Smith), for though the bunches were not remarkable for large size, the berries and exquisite finish were all that could be desired. Mr. Summers sent the next best bunches all the way from Sandbeck Park, in Yorkshire; while Messrs. Lane furnished the third prize set.

BLACK ALICANTES formed a large class, the most numerous of all, there being fourteen competitors. Among this array there were some exceptionally fine examples, particularly as regards perfect finish, and in this respect the second and third prize bunches, shown by Mr. Tate's gardener and Mr. Moss's gardener, were simply unapproachable; but for all that, the judges seemingly could not ignore the huge bunches from Longleat, though they lacked the perfect finish of the two other prize-winning sets. Mr. Pratt's bunches were fully twice or perhaps three times as large as any of the others, and were, considering their size, admirably finished; so the judges selected them for the first prize.

MADRESFIELD COURT was shown by five, and for the first and second places there was a close competition between those from Gunnersbury Park and Syon House. Mr. Roberts' bunches were not very large compared with those he had previously shown, but the berries were large and superbly coloured. The third pair came from Elvaston, also fine; indeed, all the Madresfields shown were excellent—a circumstance which indicates that this Grape is becoming better understood and more appreciated.

The class for any other variety not named was represented by thirteen competitors, and from all these the judges selected as the best three splendid bunches of Alnwick Seedling from Mr. Atkinson's garden at Gunnersbury House, Acton. As we have previously remarked, Mr. Hudson, the gardener, has evidently found out the way to bring this much-criticised Grape to the highest degree of perfection. As at the Crystal Palace, the present bunches were faultless in every respect and large, of good shape, with plump berries as black as Sloes. The second best variety was Gros Maroc, from the Marquis of Exeter's gardener (Mr. Gilbert) at Burghley, which was likewise admirable. The third prize went to some large bunches of Barbarossa from Sandbeck Park. In this class were some excellent bunches; for instance, Lord Suffield's gardener (Mr. Allan) sent three grand bunches of Foster's with berries as bright as amber, but a trifle too far advanced. Some Lady Downes from Mr. Staples, of Chipstead, were, we thought, the best in the show for finish; and other sorts shown well were Muscat Hamburg and Buckland Sweetwater.

There was a class for two bunches of the highest flavoured variety; nine pairs were shown—the sorts being Muscat Hamburg shown by two, Mus-

cat of Alexandria by six, and White Frontignan by one. Out of these the judges selected a pair of matchless bunches of Muscat Hamburg from Mr. Woodbridge, of Syon House, and for the second prize they chose the same variety from Gunnersbury Park, and for the third an excellent brightly coloured bunch of Alexandrian Muscats, from Mr. Atkinson's garden at Gunnersbury House. The highest coloured bunches of Muscat of Alexandria in the show were to be found in this class. They were as "yellow as a guinea" and plump withal. They came from Syon. Then followed a class for three bunches of any variety of Grape that has been certificated by the Royal Horticultural Society. Six competitors entered, the sorts shown being Gros Maroc, Alnwick Seedling, Mrs. Pearson, Golden Queen (shown by two), Mrs. Pince. The first prize was taken by some superb examples of Gros Maroc from the Heckfield gardens; the second was taken by Alnwick Seedling, shown by Mr. Hudson, from Gunnersbury Park; while the third prize went to Mr. Allan, who brought some admirable bunches of Mrs. Pearson, from Guntun Park, and which were uncommonly bright in colour, quite different from the dull appearance it usually has.

Two classes were provided for Strawberries, but only three dishes were shown. For any kind, the first prize was awarded to some very good fruit for the season of the year of Vicomtesse Héricart de Thury, taken no doubt from plants forced early in the spring. For either Alpine or Quatre Saisons, a fine dish of the latter variety came from Gunnersbury Park. Mr. Roberts evidently values this Strawberry by the excellent manner in which he has several times shown it this season.

DESSERT APPLES were shown in good numbers, prizes being offered for the best three dishes of ripe fruit, in competition for which eighteen sets were shown, representing the very best of ripe and nearly ripe fruit to be obtained at this season. The first prize collection contained Ribston Pippin, Cox's Orange Pippin, and the Mother Apple, and came from the well-known gardens for hardy fruit of Mr. Roger Leigh, Barham Court, Maidstone; the second prize was also taken by Kentish fruit from Mr. Staples, Chipstead Place, Sevenoaks; the third prize likewise was awarded to Kentish productions from Preston Hall, Maidstone. Nearly every collection to which prizes were not awarded had very meritorious examples. Besides the three kinds already named the following were also shown in good condition—Duke of Gloucester, Fearn's Pippin, Worcester Pearmain, King of the Pippins, Welbeck Seedling, Paradise Pippin, Jacobs' Strawberry, to which a first-class certificate was awarded at the last meeting, the Incomparable, Margil, Yellow Ingestre, and Red Quarrenden.

CULINARY APPLES, three dishes, were shown by eighteen also. Even among the unsuccessful competitors the productions were of a high standard, both in quality and size; some, indeed, were extraordinary in the latter respect, especially those that won the first and second prizes. The best three dishes consisted of grand fruits of Lord Derby, Mère de Ménage, and Stirling Castle, from the gardens of Mr. Eyre, Welford Park, Berks. The second prize was taken by Mr. Haycock with very fine even fruit of Warner's King, Peasgood's Nonsuch, and Belle du Bois. The following sorts were also shown admirably: Blenheim Pippin, Lord Suffield, Golden Noble, Gloria Mundi, Drabant Bellefleur, Emperor Alexander, D. T. Fish, New Hawthornden, Lane's Prince Albert, Hanwell Souring, Tower of Glamis, and Beauty of Kent, nineteen collections in all being staged.

PEARS.—Mr. Haycock, won the premier prize for three dished fruits of unusual size and beauty, perfectly ripe and finely coloured; the kinds were Pittmaston Duchess, Doyenné Boussoch, and Durandeau, the second prize being taken by Mr. Goldsmith, Hollenden, Tonbridge, with finely developed and perfectly ripe fruits of Doyenné Boussoch, Williams' Bon Chrétien, and Brockworth Park, whilst the third award went to the gardens of Mr. Hargreaves, Maiden Erlegh, Reading, Jersey Gratioli and Souvenir de Congrès being

good in this collection. The following kinds were shown in excellent condition in the other four collections: Louise Bonne of Jersey, Brockworth Park, Gansel's Bergamot, and Beurré d'Amanlis.

PLUMS.—There were fifteen pairs of dishes of late sorts of Plums, Coe's Golden Drop being the most prominent kind, Reine Claude de Bayay, Transparent Gage, Jefferson, Blue Impératrice, and Pond's Seedling being also shown. In each case the prizes were taken by Pond's Seedling and Coe's Golden Drop. This was a very good class considering the late period of the season.

PEACHES.—The class for Peaches was strongly represented, no fewer than twenty-eight dishes being put up. The finest of these were a splendid dish of Sea Eagle (Rivers) from the gardens of Mrs. Vivian, Singleton, Swansea. These were finely coloured and large fruit. The second prize dish came from Lord Eversley's garden at Heckfield for beautiful fruits of the Nectarine Peach, also well coloured. Besides these two kinds the following were also shown: Late Admirable, Goshawk, Prince of Wales, Lord Palmerston, Dymond, Walburton Admirable, Princess of Wales, and Lady Palmerston.

VEGETABLES.—Twelve collections of eight kinds of vegetables were shown, Mr. Miles, Lord Carington's gardener at Wycombe Abbey, again proving himself the champion of the class. It is doubtful if he ever staged a better all-round representative collection than on this occasion. There was not a weak point or a blemish in either dish, which consisted of the following: Of Onions, Cave's Pinesfield, very fine samples of a beautiful brown colour; Canadian Wonder Beans, very clean, fine pods; Edgecote Seedling Potato, with the roughness of skin that is very taking in appearance; Veitch's Exhibition Brussels Sprouts, extraordinarily fine for the time of year, and the improved variety of Masters' Prolific Cucumber sent out by the same firm, which is of a most useful size; Stamfordian Tomatoes were fine fruit, well shaped, and of good colour; James's scarlet Carrots and green Globe Artichokes completed this collection—the second prize being awarded to productions from the Earl of Radnor's gardens, at Coleshill (Mr. Haines, gardener). This was also an excellent assortment of vegetables, very clean and creditable, the best dishes being Champion Runner Beans, Autumn Giant Cauliflower, Purley Park Hero Cucumber, Stamfordian Tomatoes, very fine Rousham Park Onions, and excellent Major Clarke's Solid Red Celery. The collection to which the third position was awarded was from the gardens of Mr. W. H. Long, M.P., Rood Ashton, Trowbridge, Wilts (Mr. Miller, gardener). This included good examples of culture in every instance, the best of which and in the unsuccessful collections were Snowball Turnips, Dedham Favourite Tomato, Tender and True Cucumber, Bread Fruit Potato, G. F. Wilson Pea, and selected white Celery.

Some capital pot Vines came from Messrs. Lane, who took the first and only prize. They were quite up to their usual standard of excellence from this nursery. There was also a class set apart for a collection of varieties of Maize, but there was not any competition. Mr. Barron, however, sent up from Chiswick an excellent collection, the most promising among which were the Pointed Indian Corn (Vilmorin), White Early Pyrenean (Vil.), Early Brown Improved King Philip (Vil.), and the Red-seeded (Benary). Twenty kinds in all were shown. In the miscellaneous class the most noteworthy exhibits were for magnificent Pine-apples (Smooth Cayenne) from Welford Park. These were a great credit to Mr. Ross, the weight of the fruits being 9 lb. 7 oz., 8 lb. 4 oz., 7 lb. 14 oz., and 7 lb. 9 oz. respectively. These were awarded the first prize, the second being taken by Earl Fortescue's gardener at Castle Hill for a Smooth Cayenne Pine weighing 9 lbs. 10 oz.

Of miscellaneous exhibits, some excellent samples of Jacobs' Strawberry Apple were shown by the raiser (Mr. Jacobs); it is an Apple of most useful size, and in appearance as a dessert variety could hardly be excelled. Some fine fruit of Phillips' Perfection Tomato were also shown; it

appears to be a first-rate variety of prolific character by the clusters that were shown. The fruit are large and smooth as an egg. These were shown by the raiser, Mr. Phillips, the gardens, The Deodars, Meopham, Kent. Two enormous tubers of the White Elephant Potato were shown by Mr. Goldsmith, Hollenden, Tonbridge, who speaks favourably of the quality of this sort. The weight of these tubers were 3 lb. 10 oz. and 2 lb. 7 oz. respectively. Messrs. Rivers staged several dishes of fruit in their well-known style; among these was a dish of the Gladstone Peach of very handsome appearance; Pitmaston Duchess and Durandean Pears were also fine. Samples of the following first-rate kinds of fruit were among Messrs. Rivers' collection:—

PEARS.	
Princess	Madame Treyve
Beurré Superfin	Beurré d'Amanlis
Prince	Brockworth Park

PEACHES.	
Albatross	Exquisite
Princess of Wales	Lady Palmerston
The Nectarine	Byron Nectarine
Lord Palmerston	Victoria

Capital representative collections of Apples were shown by Messrs. Cheal & Sons, Lowfield Nurseries, Crawley, and by Messrs. G. Paul & Son. In a varied assortment of Cabbages, &c., from Messrs. Carter & Co. were first-rate samples of Early York Cabbage and Hardy Green Colewort, both being good strains of their respective kinds.

From the Society's garden at Chiswick Mr. Barron exhibited samples of a large number of different varieties of Grapes. Besides the commonly cultivated kinds, there were the following:—

Strawberry	American Moore's Early
Gros Guillaume	(Hovey)
Black Frontignan	Cielat
American Pickington	Cheptal
Miller's Burgundy	Black Monukka
Chasselas Rose	Raisin de Calabre
Espersen	White Frontignan
Duc de Magenta	Dutch Hamburg

Besides the exhibition of fruit and vegetables the conservatory was enlivened by large displays of flowers, among the principal exhibitors being the following: Messrs. Carter, who had a large and attractive group of admirably grown Cockscombs interspersed with white speciosum Lilies—a pretty effect. Mr. William Paul, of Waltham Cross, contributed largely to the display by sending twenty dozen trusses of cut Roses—a remarkable display in September. Besides these he sent Dahlias of the various classes and a capital selection of the best hardy flowers. A large display was also sent by his neighbours, Messrs. Paul, of Cheshunt, which consisted chiefly of Dahlias, show, fancy, bouquet, and single, besides collections of perennial Asters and the very finest of hardy autumn flowers. Messrs. Kelway still continue to send contributions, together with Belladonna Lilies, from their extensive Gladioli nurseries, and some magnificent Gladioli also came from so far north as Gourock, from Mr. A. Campbell, who has been exhibiting these splendid flowers grandly this season. Mr. Ware, Messrs. Keynes & Williams of Salisbury, Messrs. Rawlings, and Mr. Turner each sent large collections of Dahlias, those from Salisbury and Tottenham being particularly fine. The Cactus Dahlias, scarlet and white mixed, from Messrs. Keynes seemed to be the centre of attraction.

The Royal Caledonian Horticultural Society's autumn show was opened in the Waverley Market, Edinburgh, on the 17th inst. There were upwards of 1300 entries, which is about the same number as last year, and very nearly double that of previous years. In the 162 classes which were catalogued, every item, with but four exceptions, was competed for. Fruit was the principal feature of the autumn show, and a really splendid display was made in this class. Indeed, it has been remarked that in many points it was as good, and in some cases even better, than the collection exhibited at the great International Show in Dundee. Two well-known growers—Mr. M'Indoe and Mr. Johnstone—were first and second respectively in the class for the best collection of twelve

sorts of fruit. Although on some former occasion larger bunches of Grapes may have been exhibited, seldom have they been more numerous.

Ghent Horticultural Society.—At the last monthly meeting of this society, held at the Casino, Ghent, the following awards were made: *Certificates.*—To Messrs. Blanckaert & Vermeire, from Gentbrugge, for single-flowered tuberous Begonias; to Mr. Aug. van Geert, Mont St. Amard, for *Leea amabilis* var. *splendens*; to Mr. E. Vervaeke de Vos, Zwynaerde, for a white-flowered Cattleya; to Mr. Ed. André, Paris, for a spotted-leaved Philodendron Haini. *Cultural certificates.*—To the Continental Horticultural Company, for Vanda Lowi var. *Reichenheimi*. *Honourable mentions.*—To Mr. F. J. Spae, Ghent, for his *Aspidistra elatior* fol. var., exhibited in fruit. To Mr. Ad. D. Haene, Ghent, for his *Pinanga maculata*.

OBITUARY.

ISAAC ANDERSON-HENRY.

ONE of the oldest and best known among amateur gardeners, Mr. ISAAC ANDERSON-HENRY has passed from us during the past week, at the ripe age of 85. Few men have done more to improve garden plants by a course of careful and systematic hybridisation than Mr. Anderson-Henry; not only has he enriched our gardens by this means, but he has perhaps introduced more plants from New Zealand and the Himalayas than any other private individual in our time. We have only to look through the last twenty volumes of the *Botanical Magazine* to see how many plants therein figured are accredited to Mr. Anderson-Henry's introduction. Himalayan Primulacæ and New Zealand Veronics were particularly objects of his attention, and his garden at Hay Lodge, near Edinburgh, is exceedingly rich in these plants. To Mr. Anderson-Henry's skill in hybridising we are indebted for a race of the loveliest of Clematises, kinds which rank amongst the finest of the hybrid varieties. Amongst these Clematises those named C. Henryi and C. Symesiana, the results of intercrossing C. lanuginosa with other sorts, are the most remarkable, both having exceptionally large flowers. Campanulas were also the subjects of Mr. Anderson-Henry's attention in the way of hybridisation. Some good results accrued from these crosses, as is evidenced by the pretty C. haylodgensis and C. G. F. Wilson, the latter a hybrid between C. pulla and C. turbinata, two very unlikely species to intercross. His garden at Hay Lodge has for many years been an object of much interest to plant lovers, teeming, as it does, with hosts of new and rare plants, which we hope will fall into good hands now that the enthusiastic owner of them is gone. The keen knowledge of plants which Mr. Anderson-Henry possessed was scarcely less remarkable than his love for them and for horticulture generally. Quite recently even he paid Mr. Lindsay a visit at the Botanic Garden, and, though very unwell, seemed to take as much interest as ever in certain plants, old favourites of his in days gone by.

Gardening in the Scilly Islands.—In the account of this given in THE GARDEN (p. 261), by some inadvertence the time of planting out of the Potatoes is said to be September; it ought to be December. Again, although the tubers turn out very clean, yet trade conventionalities unfortunately seem to demand that they should be washed before coming to market.—C. A. M. CARMICHAEL.

Names of fruits.—S. A. Bircham.—Beurré d'El.—D. J. G.—1, New Hawthornden; 2, Golden Noble; 3, apparently Margil; 4, not recognised.—A. C. H. O.—Not known at Chiswick.—B. J. B.—Adam's Pearmain (small conical); Round Winter Nonsuch (reddish and conical); 4, Golden Noble; Pear is Beurré d'Amanlis.—Delta.—Pear Bishops Thumb.

Names of plants.—G. T.—Hibiscus syriacus fl. pl.—J. Bartholomew.—Bowia volubilis.—Dr. Harris.—Yucca gloriosa, belonging to the natural order Liliaceæ, Southern States of North America.—W. Stamper.—Apprentice to be the Maiden's Blush Rose.—T. P. Collings.—Fruit of the Lime (Tilia europæa).—Dr. Paterson.—Kniphofia aloides grandis.—Stoke Fleminga.—Hedychium coronarium, Garland flower.—J. T.—Staphoea (Orchid), Hibiscus syriacus fl. pl. (flowering shrub); Acalypha tricolor (stove plant).—E. F. C.—Inula Pulcatia.—A. Boyle and S. E.—Next week.

No. 672. SATURDAY, Oct. 4, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE." *Shakespeare.*

DAFFODILS ABROAD.

I WISH that either garden-loving travellers or residents abroad would tell us somewhat of the beauty of the various *Narcissi* now cultivated in other countries besides our own. Some time ago "Pakeha" gave us an interesting account of the way in which the *Narcissi* flower in September and flourish in New Zealand, and Mr. Carmichael's notice of the Scilly Island bulb fields is another valuable contribution to the life-history of these lovely blossoms. But how do these flowers prosper in foreign lands to which they are not indigenous? Do Daffodils grow well in any of the cooler or more elevated of Indian provinces? Are there any *Narcissi* actually wild in Northern India, as there are said to be in China and Japan?

Who will tell us of the kinds of *Narcissi* which prove most showy in the open air in the gardens of the United States or in Canada? Mr. George Maw and the late Mr. Harpur Crewe told us somewhat of the Spanish *Narcissi*, and Mr. Moggeridge illustrated and described those of the Riviera; but who will tell us of the Daffodils that grow high up among the bears and brigands of the Pyrenees, or of those which luxuriate in the islands of the Grecian Archipelago where *Narcissus* originated, or at least where the myth and legend of his name alike were born? Who will tell us how many *Narcissi* luxuriate in Italy? We all know here at home how the nodding blossoms of the common yellow Daffodils catch the sunbeams of our spring days and hold them for us in their deep chalices when the skies are oftentimes grey; now they sway by the thousand in our meadows and dance in the sunny warmth of an April day—nay, in some localities every spot which had seemed dim before is alight with their yellow glow when blustering March comes in.

And those who have tried betimes fail not to notice what power of endurance there is in their slender fluted stalks and in each shimmering petal as they pass through cold, rain, and raging wind storms well-nigh unscathed. But after all it is very questionable whether any species of *Narcissus* is really wild (*i.e.*, indigenous) in England, and that they are so in Ireland is but little more likely. We can never satisfactorily prove this now, but one may at least notice how these lovely flowers hold themselves aloof from desecration, and so live on for generations after abbey walls and castle keeps have mouldered away, or stand alone desolate and tenantless. The little story of "Finderne's Flowers" (published in *THE GARDEN*, Vol. XV., pp. 74 and 134) illustrates this fact so forcibly, that one may repeat it without an apology. Sir Bernard Burke being for a long time in search of a pedigree with reference to the Findernes (once a great family having a seat in Derbyshire), he sought for their ancient hall. Not a stone remained to tell where it had stood. He entered the church; not a single record of a Finderne was there. He accosted a villager, hoping to glean some stray tradition of the Findernes.

"Findernes," said he, "we have no Findernes here, but we have something that once belonged to them; we have Finderne's flowers." "Show me them," he replied, and the old man led him into a field which retained faint traces of terrace and foundation. "There," said he, pointing to a bank of garden flowers grown wild, "these are Finderne's flowers, brought by Sir Geoffrey from the Holy Land." The late Mr. Harpur Crewe claimed to be descended from the Findernes, and after some trouble found out that the flowers of *Narcissus poeticus* are those even yet known in the village of Finderne as Finderne's flowers. Although it is not likely that the roots of this plant were originally brought from Palestine, yet they might have been introduced from Europe by returning pilgrims or crusaders. What I have often observed is that these flowers are generally found growing in old abbey meadows, or on the site of former villages, camps, or old religious houses. The lovely *Narcissus tazetta floribundus* naturalised so plentifully on St. Michael's Mount, off the Cornish coast, is an instance of the long survival of a plant which it may be some old monk had once grown in the monastery garden. Quite recently a friend sent me bulbs of the old double Swan's-neck Daffodil, the double form of *N. cernuus*, from a wild copse in a wild country where I found it myself last spring. "I suppose," he adds, "there was once an old garden there, but I can find no trace of it." The same correspondent told me of the white Daffodil (*N. cernuus*, or an allied form) having also been found by a lady friend of his in a garden on the site of an ancient monastic foundation in Wiltshire. In some parts of Ireland, again, where religious foundations were numerous, this white Daffodil yet lingers in old gardens and in copses, near streams and around towers, where it is apparently wild. So also the large butter-coloured variety called *N. princeps* is abundantly naturalised in many parts of the country, and I believe it was from Ireland that Mr. Barr introduced it some few years ago.

In Wales, again, we have the very distinct Tenby Daffodil (*N. obvallaris*) abundantly naturalised, and once again in the vicinity of ancient buildings. It would be very interesting if Daffodil lovers would tell us of the apparently wild forms which exist in their own neighbourhood, especially if they would also pay some little attention to the archaeological surroundings of the locality.

The Tenby variety is pretty generally supposed, but perhaps without sufficient reason for such belief, to be a Spanish Daffodil; but that *N. cernuus* is a native of the chamois country on the Spanish side of the Pyrenees (as stated in 1629 by faithful old Parkinson) is now well known to be a fact; but, as I have said before, it would be highly interesting to hear of the growth of all the best *Narcissi*, not only in their natural habitats, but also as cultivated in the gardens of other lands, and I trust some kind reader of *THE GARDEN* abroad may oblige us in this matter.

F. W. B.

***Cereus triangularis*.**—There are two large specimens of this climbing Cactus growing along the rafters in the succulent house at Kew, both of which are flowering freely and will continue to do so for some little time yet. Unfortunately for visitors to these gardens, the flowers of this and several others of the largest and handsomest Cacti do not open before dusk, and close again soon after sunrise next morning. We were privi-

leged to see *C. triangularis* at Kew late in the evening a few days ago, and so strikingly beautiful and large were the flowers, that we could not think of any flowers with which to compare them other than those of the *Victoria regia*. At ten or eleven at night the flowers of this *Cereus* were fully unfolded, when they measured across the sepals 14 inches, and across the cup formed by the paper-white petals 6 inches, the depth of this cup being 5½ inches. Lining the inside of the flower are the long hair-like stamens, which are bright yellow in colour and very numerous. The long, fleshy, cylindrical style peeps just over the top of the cup, and is divided at its apex into about a score of spreading filaments an inch long. The fleshy, scaly tube of the flower measured nearly 8 inches in length. It is impossible to give a description of these flowers that would convey anything like a full idea of their beauty, though enough may be gathered from what we have said to give rise to a desire to possess the plant, and as the cultivation of all of the large night-blooming Cacti is easily managed, there is no reason why the bare rafters and walls one often sees in large conservatories should not be covered with a selection of them. In addition to *C. triangularis*, there are *C. grandiflorus*, *C. Napoleonis*, *C. Lemairei*, and *C. nycticalus*, all of which are free growers, very large and handsome flowered, and expand their flowers in the night. By cutting the buds of these the day before they would expand on the plants and placing them in wet sand, they may be seen fully open on the day following.—Q.

***Davidsonia pruriens*.**—The flowering of this plant for the first time in cultivation is an event of little interest to cultivators, unless it be that the name which, when the plant was first distributed, was doubtfully correct, now proves to be right. *D. pruriens* is a member—an anomalous one—of the Saxifrage family. It was first described by Baron Mueller in 1867. When full grown it is large and tree-like, and is strikingly handsome, because of its large pinnate leaves. In Australia the Plum-like fruits produced by this plant are eaten and are much relished—so we are informed. It is, however, as a garden plant that *D. pruriens* has to be considered here, and although the small dull-coloured flowers are without anything to recommend them to gardeners, the noble appearance of the plant, even when very young, is quite good enough to win for it a place amongst ornamental-leaved stove plants. The stem is erect and is thickly clothed with large, unequally, pinnate leaves, nearly 2 feet long, and divided into half-a-dozen broad, curving pinnae, with an odd one at the end. The margins of the pinnae are toothed, and the whole of the leaves and stem of the plant are covered with fine, though stiff, hairs, which are easily rubbed off, and which are so sharp as to enter one's skin, much as the hairs of the Cowitch (*Mucuna pruriens*) do. Unlike the latter, however, they do not sting or irritate. The leaves are developed four or five together, and from their first appearance till they are fully developed they are completely hidden in a covering of the most beautiful crimson, the hairs being of that colour till the leaf is ripe. We are not acquainted with any plant which shows a more beautiful venation than this. The colour exists only in the hairs, the leaf-blade itself being green. In the *Rhopala*s, *Macherium* firmum, and in some of the *Palms*, more especially in *Kentiopsis Lindenii*, the *Calyptrogyne*s, and *Welfia regia*, the colour assumed by the foliage when young is very brilliant and attractive, but beautiful as these are, none of them is so full of charm as the *Davidsonia* is when crowned with a whorl of its brightly coloured young leaves. A plant of it is now in fine condition in the *Victoria* house at Kew, and a day or two ago this plant flowered. There are also some large specimens of it in the *Palm* house in Kew Gardens.—B.

***Dielytras* in pots.**—"S. D.'s" note on this plant at p. 176 reminds me of a large specimen which was the pride and glory of a village blacksmith near here. It was in a large tub, and was when fully grown, many feet round. It was simply

screened from inclement spring weather by a little glasshouse, and was placed in the open later to perfect its growth. Beautiful as this plant is, it is one of the most disappointing we have when treated as strictly hardy, for although the roots never appear to suffer in winter, at any rate not where the soil is of a fairly free nature, it is rare indeed that the young growths escape the severe climatic changes of our fickle English spring. But it is truly worthy of all good care, and for the ornamentation of rooms and conservatories at that time of year is one of the most valuable plants ever introduced into the gardens of this country.—BYFLEET.

PLANTS IN FLOWER.

A beautiful old Dahlia.—The old *Dahlia picta* formosissima looks so decidedly different from any other, that we have been tempted to send you a few flowers of it. Being half single, too, its blooms last long in a cut state.—H. CANNELL & SONS, Swanley.

A beautiful old Dahlia, and, as Messrs. Cannell remark, distinct from all others. The flowers partake somewhat of the shape of that known as the white Cactus Dahlia. The florets are crimson and gold, two striking colours harmoniously blended. It is, we imagine, a capital garden plant, and Messrs. Cannell have done good service in thus reviving as it were a long-lost favourite.—ED.

Chrysanthemum Madame Deszrange.—This variety is a long way ahead of all the other white sorts of early Chrysanthemums; indeed, when well grown its flowers are scarcely if at all inferior to those of some of the November sorts, such as Elaine and others. Mr. Crook brings several large bold flowers of it from Farnborough Grange, which show the value of such a Chrysanthemum at this season.

Bessera elegans.—Flowers of this re-introduced Mexican bulbous plant from Messrs. Horsman, of Colchester, remind us of its graceful slenderness and beauty. The present specimens have been admirably grown, no fewer than a dozen flowers and buds being poised on the top of the fragile stems. The bright red colour of the expanded blooms striped with white is extremely showy. This plant was figured not long since in THE GARDEN.

New early Chrysanthemums.—Mr. W. Piercy, the Chrysanthemum nurseryman of Forest Hill, sends us flowers of three new sorts of early Pomponé Chrysanthemums which seem to be improvements on older kinds. There are two yellow sorts named Early Flora and Fibert. Both are extremely floriferous, and the colours are bright and clear. The other sort named Lyon has reddish purple flowers also freely produced.

Salvia farinacea.—There is a delicate beauty about this autumn Salvia which makes it desirable. It is not showy, but the upper parts of its slender stems are covered with a white mealy substance, on which the purple flowers are thickly set. It is a Mexican species, not absolutely hardy, but one which succeeds well in the open border in the south. Mr. Crook brings us some fine spikes of it from the garden at Farnborough Grange, along with some robust spikes of Larkspur and tuberous Begonias from the open border; *Salvia cacaliifolia* is also sent, but it is not nearly so showy as *S. patens*.

Double Pelargoniums.—A series of new varieties of double zonal Pelargoniums has been sent to us by Messrs. Daniels, of Norwich. There is a large number of sorts, the best of which we have singled out. Their names are Triomphe de France, pink; Dr. L. Dufour, cerise; Merveille, flesh-pink; Gustave Widdemann, carmine-pink, Explosion, crimson; and Carolus Duran. These all have large trusses of fine double flowers and form a brilliant series, but as we have no means of comparison we cannot say how much they differ from older sorts.

October alpine flowers.—A choice little gathering of alpine flowers has been sent to us by Messrs. George Paul and Son from their hardy flower nursery at Broxbourne, thereby indicating that the rock garden there is not altogether devoid of interest, even at this late date. There are among the specimens really good blooms of *Androsace lanuginosa*, *Hypericum aegyptiacum*, a pretty and neat rock garden shrub a few inches high with silvery foliage and tiny yellow flowers; *Cyananthus lobatus*, an interesting Himalayan plant; *Hypericum reptans*, a real rock garden gem; *Linaria alpina*, good for the season; *Thalictrum anemonoides* and *Coronilla varia alba*, which, by the way, we do not remember having seen before.

It is a delicately pretty flower, not pure white, but with a faint suffusion of pink. There are also flowers of a hardy *Cyclamen* which is strange to us. It has triangular leaves considerably mottled, and with pale pink-crimson throated flowers. Messrs. Paul do not know its name. Sprays of *Menziesia empetrifolia* and *Margyricarpus setosus* are among the gathering. The last named is a low-growing shrub with finely cut foliage and furnished at this season with small white Mistletoe-like berries.

New single Dahlia.—Mr. Teesdale, the well-known Dahlia raiser at Wyke House, Chichester, sends us blooms of a remarkable single Dahlia which he has just raised, and which he regards as unique. The florets are pure white-edged half their length with yellow. It is extremely pretty, and quite novel as regards colour. Mr. Teesdale also sends flowers of what may be called a yellow Cactus Dahlia, though the blooms are not identical in shape with those of Juarez. It was obtained from the white Cactus Dahlia Constance, which it much resembles. It is a good clear yellow, and will no doubt fill a gap, even among the multitudinous list of Dahlias already in cultivation.

New single Dahlias.—Of new seedling Dahlias there seems no end. Every week some are brought to our notice, but few seem to be exceptionally noteworthy. Mr. D. T. Fish now sends us a batch from Hardwicke, Bury St. Edmunds, consisting of about a dozen sorts, all seedlings, and some half a dozen of them are really remarkable. Most of them are under numbers, but those named Mrs. D. T. Fish and D. T. Fish are the most distinct. The latter is exactly similar to the sort sent by Mr. Teesdale, of Chichester. The florets are white, and broadly edged with canary yellow. They are flat, and, being rounded in outline, form a circular-shaped flower; the Mrs. Fish variety has also white florets, but edged with crimson. These are both pretty and quaint looking sorts, and will be sure to become popular. Another (No. 4) has crimson-red florets, topped and striped with white. The best of the large self varieties are (No. 9) a large bold flower of a brilliant amaranth, and (No. 6) also a massive flower of a rich crimson.

Some fair autumn flowers (October 2).—Carnations, Lady Agnes and Clarisse have held on bravely till now, but this is their good-bye. [*Charming in colour and fragrance and full-sized flowers.*—ED.] *Choisya ternata*, flowering for the second time. [*Large flowers with a sweet odour. Buds and blossoms orange-like and beautiful. An excellent thing for autumn if we could secure its flowering then generally.*—ED.] *Escallonia montevicensis*, one of the few late autumn flowering shrubs not often enough grown; very neat and pretty on a wall. [*Good white flowers in showy heads.*—ED.] Michaelmas Daisies are grand just now, thanks to Mr. Wolley Dod, who gave me last year all I liked best. I think of arranging a walk in the kitchen garden, already rich in Asters, as a Michaelmas border for next year. It is so good now that I want it to be a great deal better. I do not send any Daisies; they should be seen either growing or lightly and loosely arranged in something big, and should be cut 3 feet to 4 feet long, which would make them bad travellers.—G. J., Munstead, Godalming.

Hibiscus grandiflorus.—The past hot summer has just suited the requirements of this beautiful North American plant, of which there are some uncommonly fine specimens in Mr. Joseph Stevens' garden at Grasmere, Byfleet. It is a near ally of what Gray calls the Swamp Rose Mallow (*H. Moscheutos*), but differs in several little details. *H. grandiflorus* was named by Michaux, and seems to be a more southerly plant than *H. Moscheutos*. It is a tall perennial, ranging from 4 feet to 8 feet high, having slender stems furnished with large heart-shaped downy leaves, and carrying on the upper parts numerous large, showy flowers of a delicate rose-pink colour. Those which Mr. Stevens brings us measure fully 5 inches across, and there being several on each stem, the plant is extremely showy. It is

apparently very floriferous, as Mr. Stevens says that he has had as many as sixty flowers open at one time. They do not last much more than a day, but as they are rapidly succeeded by others, there is a continuous show. It likes a warm soil and requires hot weather to bring it to perfection, hence it is better this year than it has been for several seasons.

Cereus Lemairei.—A flower of this fine Cactus, which was produced at Kew a few days ago, was quite as large and attractive as *C. triangularis*. From this species it is distinguished by the leafy scales, which clothe the long tube of the flower, being bright yellow in colour, and by the colour of the sepals, which were lemon-yellow margined with red. The stem of the plant is not so large nor so distinctly triangular as *C. triangularis*; it is also a deeper green and slightly spiny. Like the other climbing Cereuses, *C. Lemairei* produces roots all along the branches, and is thus enabled to climb up trees, &c., to a considerable height. It is also a night-flowering kind. The odour of the flowers is not so distinctly sweet as one might be led to expect from what is written about this species elsewhere.

TREES AND SHRUBS.

TREE SEEDS AND THE SEASON.

I NOTICE that the Acorn crop is a very good one this year, and that Beech mast, Mountain Ash, and Holly berries are also plentiful. As far as I have had an opportunity of judging, most trees and shrubs are bearing an unusual quantity of fruit. Oaks, Beeches, Horse Chestnuts, Sweet Chestnuts, Hollies, Sycamores, Mountain Ash, White Thorn, Laburnums, Hazels, Brambles, and wild Roses are covered with fruit. The Mountain Ash, White Thorn, and wild Rose bushes are now most striking and beautiful objects. The White Thorns, which were as white as snow in the spring, are now perfectly crimson with berries. It is commonly said that a great abundance of berries is the sign of a hard winter to follow; this is by no means to be relied upon. The berries really play the part of historians, and not prophets, and relate that we had a favourable spring and summer, but as the last three winters have been so mild, it is very probable that the ensuing one may be severe. Our trees and shrubs ought to be well fortified to resist the cold, as they must have ripened their wood particularly well this year. The foliage appears to have been unusually dense, so that the autumnal tints ought to be very fine, if we do not get frosts or gales to bring the leaves off prematurely. Some trees are changing colour very early. On August 15 I noticed Maples, Birches, young Elms and Limes, and Sallows beginning to turn, and at the end of the month some young trees had lost nearly all their leaves, I presume, owing to the heat and drought. I was in Philadelphia during the summer of 1876, which was very hot. In one of the streets there was a row of Horse Chestnuts which lost their leaves in the course of the summer. On August 18 they were coming into leaf again; one tree had several fair-sized flower-spikes on it, and was still bearing the fruit from the spring flowers. I was shown the other day some Acorns which had just been gathered. They had begun to germinate and crack as they hung on the trees. The undersides of the leaves of many young Oaks this year are covered with Oak spangles. On some trees there is hardly a leaf which does not bear some of these little galls. Fortunately for the trees, these galls are not formed until late in the season, so that this injury to their leaves is not felt so much as it would have been had they been attacked earlier.

G. S. S.

How to preserve posts.—"I discovered many years ago," says a writer in the *American Cultivator*, "that wood could be made to last longer than iron in the ground if prepared according to the following recipe: Take boiled linseed oil and stir in pulverised coal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot."

THE WHITE BIRCH AND ITS VARIETIES.

THE genus *Betula* contains about five-and-twenty species, and is most numerously represented in the Northern Hemisphere, where it ranges from temperate to arctic regions; it is also found in Mexico and Peru. None of the species, if we except the second British one, the dwarf mountain Birch (*Betula nana*), has a geographical range so extended as *B. alba*, the subject of these notes; moreover, not one is such a handsome and graceful tree. Either when in leaf or leafless it possesses an airy grace all its own. Few will be disposed to question the judgment of the poet Coleridge, who pronounced it—

Most beautiful
Of forest trees, the Lady of the Woods.

It is no less remarkable for its lightness and elegance than for its hardiness. It stands in no need of protection from other trees in any stage of its growth, and lives on the bleak mountain-side and other exposed situations from which the sturdy Oak shrinks in dismay. Putting on one side the only other representative of the genus *Betula* in Britain (*B. nana*), some of the alpine Willows, and the dwarf Juniper, none of which can be called trees, no other native tree ascends to such elevations in Britain. In the Highlands of Scotland it is found at heights of 2500 feet above the sea level, whilst the common Juniper only reaches to 2400 feet, the Scotch Fir to 2200 feet, the Alder to 1600 feet, and the Oak to 1350 feet. The higher, however, the tree ascends and the more northern the latitude the more shrub-like does it become. It is a fast-growing and rather short-lived tree, in favourable localities sometimes attaining a height of 80 feet, though generally not exceeding 30 feet or 40 feet. In very bleak, exposed situations or at considerable elevations it often grows no higher than 2 feet or 3 feet. To the inhabitants of northern latitudes it is of no little importance, and an interesting series of objects in the museum (No. 1) at Kew prove to how many purposes its wood and bark are applied. Perhaps it will be hardly out of place to mention a few of these here. Bread of Birch bark from Lapland, made as long ago as 1857, shows one of the very many uses to which Birch bark is or may be put. Shoes made of strips of bark, used by the peasants of Northern Sweden when at work in their distant meadow swamps; neat baskets in which they sell wild Raspberries; and a specimen of the well-known Alp horn from Switzerland, by no means exhaust the enumeration of articles illustrating Birch bark at Kew. It is a valuable tanning agent, and an oil expressed from it is largely used in the preparation of Russian leather; indeed, it is to this oil that the peculiar fragrance of that article is due. Formerly the Highlanders used the outer layers for lighting purposes, and, before the invention of paper, the inner ones for writing upon. The sap is convertible into wine, vinegar, and spirit; when fresh it forms an agreeable beverage and an intoxicating liquor when fermented. The wood is esteemed for light turnery work, and is at the present time largely employed in the manufacture of spools or cotton reels. By many authorities what is here looked upon as a

single species is divided into three, viz., *B. verrucosa*, *B. pubescens*, and *B. virgulosa* (*B. urticæ-folia*). The latter only occurs as a cultivated

In *B. verrucosa* the leaves are said to be more or less truncate at the base, and the lateral lobes of the bracts in the female catkins are falcate-reflexed or spreading; the fruit, too, is said to be obovate. In *B. pubescens*, on the other hand, the leaves are described as being more or less rhomboid, and the lateral lobes of the bracts of the female catkins are ascending, the fruit being broadly obovate. After a careful examination of a large series of wild specimens, as well as the cultivated collection at Kew, I am convinced that these characters are not to be depended upon, as I have found repeatedly trees with well-marked foliage of the one so-called species and bracts and fruits agreeing perfectly in form with those of the other one. The pubescence, too, varies considerably, as also does the form of the fruit. Leaves, glabrous or pubescent, occur in conjunction with the two forms of bract and fruit. Altogether, so many intermediates occur in some of the wild Birch forests which cannot properly be referred to either *B. verrucosa* or *B. pubescens*, that the only course is to group the whole under the Linnean *B. alba*. As it would occupy too much space to mention all the names which have been given to so-called species split off *B. alba*, and as the books in which they are described are inaccessible to the great majority of my readers, it will be enough to say here that I include under *B. alba* all the arboreal Birches of Europe and the Poplar-leaved Birch (*B. populifolia*) of North America. Most of the varieties which follow are probably of garden origin; where such is not the case, and it is known to me, I mention it. The Birch grows freely in almost any soil; in a wild state it is frequently found in a poor, shallow, sandy loam, where scarcely any other tree would flourish. The garden varieties, as well as those which have originated in a state of nature, must be increased by working on the common White Birch.

VAR. DALECARLICA.—This was first found wild in the Swedish province which suggested its name, and was described as a species by the younger Linnæus. As far as foliage is concerned, it is by far the most distinct of all the numerous varieties of *B. alba*. The leaves are very deeply cut—indeed, almost palmate, and the segments toothed—Bosc says, “cut like those of Hemp.” The twigs are slender and pendulous. It is a charming decorative tree, well worth a place in every collection of deciduous trees. In some nurseries it is met with under the names of *incisa*, *laciniata*, and *laciniata pendula*.

VAR. FASTIGIATA is one of the most striking varieties in cultivation. It was sent out by an Alsatian nurseryman less than a score of years ago, and is now getting fairly well known. It exactly resembles the Lombardy Poplar in habit, and has dark green leaves, which are retained longer on the tree than those of any other variety of the White Birch.

For some years at Kew the foliage of this variety has remained unchanged some time after that of its neighbours have been shed. Frequently, both in books and gardens, it is met with under the name of *B. pyramidalis*.



The Weeping White Birch. Engraved for THE GARDEN.

plant in Britain, but it seems to be simply a form of *B. alba*. The distinctions relied on by authors to distinguish the two first named forms reside principally in the leaves and the fruiting bracts.

VAR. FOLII ARGENTEO-VARIEGATIS, VAR. FOLII AUREO-VARIEGATIS.—The names of these are sufficiently indicative of their character. Except in general collections and in large places or by those specially interested in variegated trees are they at all likely to be grown.

VAR. FOLII PURPUREIS is a variety of erect habit, and where it does well is a very ornamental tree. In spring and early summer the leaves are a deep reddish purple, and even in late autumn they exhibit a decided bronzy tint. It is known in some gardens as *B. atro-purpurea* and *B. purpureo-nigra*.

VAR. PENDULA (the Weeping Birch).—This is too well known to need description. The ordinary form reproduces itself fairly true from seeds, but often does not put on its distinctive character until the trees have attained some little age. Sub-varieties of this form, which are usually grafted standard high on *B. alba*, are *B. pendula elegans* (*Woods and Forests*, vol. i., 458), a less graceful and more formal plant than the common Weeping Birch; in habit it quite resembles the Kilmarnock Weeping Willow. *B. pendula Youngi* is another very decided weeper sent out some years ago by Mr. Maurice Young, of Godalming.

VAR. POPULIFOLIA (the American White Birch) has triangular, very taper-pointed, long-stalked leaves, larger in size than those of any European form of *B. alba*. It is a small and slender, graceful tree, rarely exceeding 20 feet to 30 feet in height. It is common on poor, dry, gravelly soils from Pennsylvania to Maine (near the coast), and is also found on the borders of swamps. According to Professor C. S. Sargent's "Catalogue of the Forest Trees of North America," it springs up everywhere on abandoned land in New England. The same authority describes the wood as white, moderately hard, close-grained, and susceptible of a good polish; it is extensively manufactured into spools, shoe-pegs, &c., and recently has been largely exported. Two sub-varieties of this occur in gardens—one, *laciniata*, with leaves more deeply cut than the type, and the other, *pendula*, with drooping branches like those of the weeping variety of our native Birch.

VAR. PUBESCENS has hairy leaves, smaller in size than those of *B. alba*, with which in a wild state it may nearly always be found growing.

VAR. VIRGULOSA (URTICIFOLIA) is said to be found wild in Southern Sweden. It has small, dark green, hairy leaves, irregularly and deeply toothed. It is a somewhat slow grower and is a very distinct variety. *B. heterophylla*, a seedling which originated some years ago in the Isleworth Nurseries of Messrs. C. Lee & Son, is very similar in habit and in outline of leaf, &c.

GEORGE NICHOLSON.

Royal Gardens, Ken.

Dwarf Furze (*Ulex nanus*).—This is by no means so frequently met with as the common kind, but of all the wild flowers that bloom in the autumn it is by far the brightest. In this neighbourhood there are large tracts of it, and, owing probably to the hot summer, it is blooming with great profusion. In its highest state of luxuriance it does not attain more than 1 foot, and in a general way not more than 6 inches in height; it would therefore be just the thing for carpeting a dry sunny bank where perhaps but little else would thrive. In the wild garden, in a suitable position, this little Furze should have a place, for it blooms gaily through the dreary and flowerless months of November and December when fairly open and mild.—J. CORNHILL.

The smooth Sumach.—Although *Rhus glabra* does not attain so large a size as the common Stag's-horn Sumach (*R. typhina*), it makes a very ornamental bush or small-sized tree. The leaflets number from eleven to thirteen, are a deep glossy green above and whitish beneath. Both sexes are well worth growing, but the female tree is the more handsome of the two on account of the panicles of scarlet flowers. In some catalogues this goes under the name of *Rhus coccinea*. The male tree has greenish yellow flowers, but

with the exception of this difference, both are alike in habit and in every other particular.

FLOWER GARDEN.

PLANTING DAFFODILS.

DEEP v. SHALLOW PLANTING FOR NARCISSI.—Here on our deep, rich, sandy soil we find deep planting the best for *Narcissus* bulbs of all kinds. Very few of our bulbs are under 6 inches below the surface, and some are a foot or more, but I should not venture to recommend this practice of deep planting for all soils alike. "J. S. W.'s" observations on shallow or surface planting are most interesting (see p. 203), and it might be of some service if other cultivators would record their experience, or, at least, make a few experiments in the same direction and then let us know the results. Here deep planting is best, but on other soils shallow planting might give better results, more especially where a cold clay or retentive subsoil lies below. We have some bulbs which naturally work their way to the surface (some *Lilies* and *Amaryllis Belladonna*, for example, if left undisturbed do this here with us), just as others somehow manage to dive a little deeper every year. When digging up

BULBS IN A WILD STATE I have often wondered how they had managed to get down a foot or 15 inches among rocks, tree roots, and other obstacles. This is all the more unexplainable if we remember that many wild bulbs only increase by their seeds, and that these are naturally sown or fall upon the surface of the earth goes without the saying. There is an old proverb which tells us that what is "one dog's meat is another dog's poison," and no doubt the truth of this argument applies to bulbs in different soils. It then becomes necessary that we should avail ourselves of the experience of others on this point, but in all cases particulars of soil and the subsoil especially should be given. Well as our soil suits *Narcissi* generally, we can so far only get

NARCISSUS BULBOCODIUM to establish itself in one spot. There it luxuriates; even late planted bulbs which have been forced indoors soon recover their strength and vigour on that one little plot. It is on a dry, sunny border, the soil being a very sandy loam, and this is further dried by the roots of some Holly trees and a Privet hedge, both of which also do something towards keeping the rainfall off the place where the bulbs are. My experience is that the Hoop-petticoat Daffodils generally are difficult to establish in ordinary garden soil, although good imported roots bloom quite luxuriantly the first year. Here deep planting in very dry sandy loam is successful in the open air, but I shall this year try

SHALLOW OR SURFACE PLANTING with this and some other kinds. Of one thing I am convinced, and that is that in July or August all Daffodil bulbs may be dug with safety and at once replanted with impunity. The flower-bud for next spring's blossoming is then formed in all the best bulbs, and if it is not there at that season, no amount of drying off the bulbs after they are dug will cause a bloom-bud to appear. So far as our soil and climate are concerned, we now know exactly when *Narcissi* may be best removed and replanted without injury. This is so much gained, and I wish I was equally clear with regard to other things. When, for example, should the *Colchicums* (often in error called autumn Crocuses), now so beautiful, be removed—that is to say, at what period of the year are their roots and leaves alike inactive or absent altogether? This, indeed, is

THE GOLDEN RULE in replanting all plants, from a Snowdrop to an Orchid. The best time to remove or to add fresh soil is just before the new roots appear from the bulb or the pseudo-bulb, or the growth, as the case may be. As Mr. Wolley Dod told us at p. 173, "no doubt the million dig up their Daffodils at the wrong time." Alas! this is true of nearly all other garden plants and bulbs. Even yet it is surprising the number of people who believe autumn the best time to

replant hardy plants and bulbs of nearly all kinds. Autumn is the time I leave plants generally (especially bulbous or fleshy-rooted ones) alone to prepare for their winter rest or winter's work, as the case may be. Here with us

SPRING PLANTING is the rule, and all propagation of hardy plants is here carried out in spring or summer, and not in autumn. There are exceptions to this, as to every rule, but I am sure fewer alpine and herbaceous plants will be found to fail if divided and replanted in good soil every spring or summer rather than in the autumn and winter months. With *Funkias*, *Eryngiums*, *Alstroemerias*, and fleshy-rooted plants generally spring division is best.

REPLANTING DAFFODILS.—Since I wrote under this heading on p. 149 I have received many communications from amateur and trade bulb growers, in some cases accompanied by specimens, proving that my remarks were "true to nature." In a word, all my observations and experience go to prove that—1, *Narcissi* should be dug up in July or early in August when that operation is necessary; 2, the bulbs grow and bloom stronger and better in all ways if at once replanted; 3, that the drying off or ripening of *Narcissus* bulbs is unnecessary, and actually injurious to their after growth and blossoming; 4, that on cold wet soils shallow or surface planting on raised beds with deep alleys



Twig of *Betula alba*, with catkins, female flower, and fruit (see p. 291).

between for drainage is beneficial, the bulbs being covered with prepared soil.—F. W. B.

—"F. W. B.," in repeating what "J. S. W." tells us as a warning to those who plant bought *Narcissi* in October and November has, unless a parenthesis is missing somewhere, misunderstood me, and caused my words to express the opposite of what was intended by me. I did not give the words he quotes from p. 203 "as a warning" of any kind, but to show "Veronica" that I did not think it mattered much eventually if the bulbs were planted as late as November or even later, as my remarks go on to show. I do not think that "planting or replanting," if it were practicable, in July or August would make the least difference here or in any late district, as "F. W. B." will understand when I tell him more. I could understand roots being affected for flowering for the first year, perhaps, by the date of planting, but how that can influence Daffodils or other bulbs for years afterwards, as in our case, I cannot see. Plant when we may, all plants, if they live, have the power of recovering their normal habit in the end, and so I have no doubt have Daffodils. "F. W. B." says (p. 230)—"If bulbs are expected to establish themselves and to flower well year after year, then by all means dig and replant or plant in July or August at the very latest. Many people have failed to induce bulbs to naturalise themselves on the Grass or in the wild garden, and have laid the blame on soil and climate, or the struggle for existence in Grass, or on the nurseryman who supplied the bulbs, when

the secret of failure consisted simply in this fatal mistake of late planting." I believe it is more than a dozen years since I planted about a couple of bushels in our herbaceous borders late in November and they have flowered well every year since, but not so well as the exposed bulbs of the woodman's on the other side of the wall before mentioned, and which I have ascertained were replanted 7 years since—not in July or November, but as late as the month of April. When I tell "F.W.B." that, according to his occasional notes in THE GARDEN on the flowering of his Daffodils, our plants flower a month or six weeks later than his do near Dublin, he will see that climate may explain much that he attributes to late planting. He says I should plant in July, in which case I should have to divide and replant our Daffodils when the later kinds were still in full flower. Hot as the summer has been, the leaves on all the sorts here were still green at the beginning of August, and for a good while after. The exposed roots in our wood nursery which I spoke of, and which invariably bloom so abundantly, were not out of flower in August. A wreath was made of their flowers not many days before the end of July. The decaying foliage of these plants is still lying on the ground, and to-day (September 13) I gathered a handful of green leaves and flower-stems from them. From this it will be seen that the time of planting has nothing whatever to do with the production of flowers in after years. The bulbs, unless planted shallow, are simply too late in ripening, and do not form flower-buds like many other things one could mention when grown under similar circumstances. I have little doubt I shall be able to alter that in future by shallow planting, and I would strongly advise northern growers to plant their Daffodils like Potato Onions. The first year, to prevent injury from frost, they may cover the bulbs over with some dead leaves or litter, but after a season's growth they will be hardy enough to endure the winter exposed. The effects of this shallow planting, as I recently mentioned, are too marked to escape notice, not only in the case of Narcissi, but also in that of the Tritoma. A whole row of the latter here planted close to the surface is just going out of flower, and not many yards off in a good soil where the roots are buried several inches deep the flower-stalks are just pushing out of the socket, and none are in flower. My advice is, the further north or the colder the soil or situation to plant the shallower, and it will be found of no consequence whether the bulbs were originally planted in July or November. The common practice is to plant Daffodils deep; hence the bulbs, like deep roots of fruit trees, do not ripen, and hence, no doubt, the origin of the idea of digging them up annually to ripen. I doubt if we are at all right in planting Hyacinths, Tulips, Daffodils, or other exotic bulbs as deep as we do. They appear naturally fitted to grow on or near the surface, and one fails to see how naturally propagated Daffodils can grow in any other fashion, as I believe seedlings have their bulbs exposed when taken from where they are sown. J. S. W.

Gladioli in Scotland.—There is evidently something in the climate or soil, or both combined, in some parts of Scotland that is particularly favourable to the flowering of Gladioli. Those who happened to see the exhibition that took place at Dundee eight years ago will recollect that one of the most noted English growers competed with a grand lot of spikes remarkable for the fine varieties they represented and the development of the individual flowers, but nevertheless the collection from the south was easily beaten by that of his northern opponent, who showed similar varieties, with this difference, that the individual spikes had considerably more open flowers on them, and were consequently so much longer. At the show just passed the case was similar. In the collections staged by the growers who competed in the principal classes many of the spikes had such a number of flowers expanded as is rarely, if ever, seen in the south or west of England, many of the varieties

having from fourteen to seventeen finely developed flowers on them, the lower ones as fresh as those above. This was particularly apparent in the collections shown by Mr. A. Campbell, Cove Gardens, Gourack, and Mr. J. Gray, gardener to Mrs. Moffat, Newfield, Kilmarnock.—T. B.

WHAT DOES CHEIRANTHUS MEAN?

IN writing about *Othonna cheirifolia* (p. 283), "Salmoniceps," having assumed that the specific name is intended to mean "with foliage like a hand," proceeds to disparage "gardener's Greek;"



Catkin and leaves, and (f) female flower of *Betula populifolia* (see p. 291).

but it is quite as fair to assume that the word is intended to mean "with foliage like a Wallflower" (*Cheiranthus Cheiri*), for I maintain that the foliage of this *Othonna* is at least as much like that of a



Twigs and leaves of *Betula alba pendula* (see p. 292).

Wallflower as it is like a hand, though I admit that it is not much like either, and I have sometimes been inclined to think that the name originally given was "*coriifolia*"—i.e., "leather-leaved," which would seem more in character, and I have seen the name so written.

"Salmoniceps" goes on to say that *Cheiranthus* means "hand-flower." Now, in spite of the almost universal consensus of botanical dictionaries which give this derivation, and say that the flower was so called either because it was often held in the hand, or because it spreads its petals like a hand, I venture to doubt whether the Greek word *cheir*, a hand, had anything to do with the name.

Cheirifolius may mean nothing more or less than "Cheiri-leaved," just as *Cheiranthus* means "Cheiri-flowered." This leads us to the question, What is Cheiri? I find in Don's "Botany" (published in 1831) that Cheiri or Kheiry is the Arabic name of a plant with red and very sweet-scented flowers. I suspect, therefore, that the name came early to England as the name of a drug, and, as in many other cases, was transferred to a plant well known in English gardens; for as the science and name of alchemy were originally Arabic, so the Arabic names of Arabian drugs or plants came to England with the science. These names were often adopted by botanists, and many are still retained, but probably in some instances for different plants from those to which they originally belonged. So Cheiri became applied to the Wallflower tribe. Gerard (p. 371, ed. 1597) tells us that the Wallflower is called "in the Arabic tongue, Keyri," but on the previous page he writes the word Keiri, and in Greek characters, as if the name was Greek. Parkinson, in his "Paradise" (p. 256, ed. 1629), gives the name Keiri to the whole Wallflower tribe, saying that the plant is called Keiri or Cheiri, "by which name it is chiefly known in our apothecaries' shops, because there is an oyle made thereof called cheirinum." This statement should give us a clue to the true origin of the name. For examples of Arabic names of drugs or plants being adopted by botanists, we may mention Ceterach, the name of a Fern, supposed to produce a powerful drug; Alkekengi (the Winter Cherry), Sumac, and there are many others. C. WOLLEY DOD.

CHOICE HARDY PLANTS.

DICTAMNUS FRAXINELLA.—This interesting old border plant is generally increased by means of seeds; sometimes the division of its roots has been hinted at, but in the case of this plant I have rarely found that even very strong roots could be divided in the ordinary way. Numerous and large as the roots may be, they are usually topped with a spindle-like bit of wood on which the plump sprouts are closely set. Therefore, the best divisions that could be made in most instances would prove uncertain, and the naturally slow growth of the plant does not mend matters. I have tried both bought and home-grown seed, sowing the latter as soon as ripe—some five pots a year and those two years sown have the shining seeds in them yet, as sound and nearly as hard as shot. A few seeds of last year taken from unburst pods germinated in the spring following, but only three or four made plants. To try to get plants from cuttings could scarcely require less trouble and patience, and why not in the case of a Rutaceous plant with shoots of a soft-wooded character? Had the idea occurred sooner, I should have had well-rooted cuttings now. Slips taken in mid-August are finely callused, though the wood had become too hard and dry by that time. The cuttings were simply put in clean sand, placed in a close shaded frame, and the tops kept moist. I have also got a few chance plants from root-cuttings, i.e., strong roots well furnished with fibre, the cut part being brought level with the surface. A sure, but slow way is to lift strong plants in autumn, bend the long, thick roots like a syphon, bringing the upper bend level with the surface and making all firm; then at the apex cut out a tiny wedge, and there eyes will form the first season. Slugs are very fond of the shoots when young, but a thick dressing of wood-ashes will protect them.

EURYBIA GUNNIANA.—This produces charming wreaths of soft, white, Daisy-like flowers. Practically it is a shrubby Aster, and yet both growing and cut very different from an Aster. I do not know anything to which it can be compared better than densely-flowered, one-sided branches of Hawthorn. The flowers are, however, nearly an inch across, and the foliage less than that of a Hawthorn and greyish. Though an Australian shrub, it has stood out of doors here these two winters, and it flowers abundantly at the height of 2 feet. Habit slender and bending.

SELF-SOWN SEED.—In a garden of hardy perennials deep digging has rarely to be done amongst flower roots. Therefore, where plants are allowed to seed a maximum amount of it keeps on the surface or under growable conditions, and who can deny, even if the seed of some things becomes a pest, that self-sown seedlings are interesting? Seedlings coming where they list often give us hints worth taking; they indicate the proper seed surface, and many kinds difficult to raise have been seen to vegetate freely on walks and among stones. Thanks to self-sown seed for many plants of self-hybridisation origin; the bare beds of summer, in which dormant Primulas, Anemones, Anthericums, and bulbs are resting, spaces which may be termed the lungs of thickly planted gardens, would soon be covered with a rank crop of seedlings if allowed. From this let those take a hint who are asking what to grow in such patches; plant hardy perennials and let them seed. Let me mention what happened one season during the resting period of *Ranunculus alexicaulis*, *Allium neapolitanum*, and *Cyclamen neapolitanum*, which occupied a bed 3 feet by 10 feet. On that bed Pansies, Hellebores, Centaureas, Snapdragons, Campanulas, &c., are now a verdant mass, and many are in flower. A bed of *Primula cortusoides* has had to be cleared repeatedly of similar seedlings, whilst a bed of Crocuses and Tulips had become overgrown with Poppies, Linums, and Evening Primroses.

GYPSOPHILA PANICULATA.—Seldom is much said in favour of this useful plant. Although it cannot be said to be showy, yet it is truly handsome in its way. It is more gauzy than the lightest of the Statice, and its tiny white flowers on hair-like stalks are attractive. In a cut state, too, they are as valuable as anything I know for epergnes and bouquets; indeed, they seem indispensable. It is a plant which flowers for a long time, and one which loves sunshine and a dryish border. Without saying that it should have a calcareous soil, as its name would indicate, it certainly flourishes where a little has been added to the ordinary garden mould. In some gardens it will scarcely live, but I think in a raised or well-drained position there can be little difficulty in flowering it well. It was, I remember, one of the pet hardy plants of the late Mr. Thos. Williams, of Ormskirck.

MILLA BIFLORA is doubtless a lovely flower, but when tested as an open-air subject there are, at least, three things against it—the bulbs or tubers are very liable to rot from dampness, the growth is extremely slender, the large pure white starry flowers will lie on the ground unless supported; that would scarcely be a fault but for the next, viz., the flowers only last for a couple of days. We gladly tie up flowers if of a fairly durable kind like those of Carnations.

POLYGONUM CUSPIDATUM.—Many will almost shudder when the name of this plant is mentioned, and under some conditions it is an evil root in a garden, and yet it is much admired—by those who do not grow it. Properly placed, it may be serviceable, especially the variety Sieboldi. What caused me to mention this plant is the fact that I have just seen some of its soft creamy-white flowers used in wedding bouquets, and they were a revelation of beauty, softly warming up the coldness of the whites, and also relieving that flatness which many flowers possess, however well arranged. It much resembles *Spiræa japonica*, but is softer in colour and not quite so stiff. This herbaceous plant grows 10 feet high, has handsome arching stems, bold leaves, and lamb-tail-like racemes of bloom produced from the axils of all the upper leaves. There is, however, another kind in several respects better. I have grown it four or five years under the name of *P. c. compactum*. Even after so long a trial it is not more than 3 feet in diameter and it never exceeds a yard in height. It is a dark green plant with reddish stems. The flowers, which are axillary, are most abundant, and borne in small erect branched or pyramidal clusters and creamy white. They appear a little earlier than those of *cuspidatum*.

BULB PLANTING.—I am glad this matter has come under discussion. In addition to the greater part of my soil being of a light character (though I have some stiff in which I grow a few Daffodils), I have for the past two years planted very near the surface, and if experience extended over so limited a period is worth anything, or proves anything, it is that most of such bulbs as I have tried are better so planted than deeper. I feel confident that the larger bulbous and more shy flowering Scillas are best when planted shallow, and a row of my finest Crocuses just before we gave the usual summer top-dressing showed on the surface like a row of Shallots. The Belladonna Lily is far more reliable, if one may speak from a test of a couple of bulbs, if set with the bulb on the surface than if deeper, and then earthed liberally during the growing time of the leaves, or in time for the earliest frost when the flowering is usually past. After leaf growth the bulbs may be readily bared, so that the sun may bake them through their silky tunics. Anyhow, surface or shallow planting deserves a trial and the results carefully noted.

LUPINUS ARBOREUS lived with me through last winter and has flowered well. The plants are now 5 feet high and full of rich foliage. I do not care much about the bloom; its effect is too much like that of *Laburnum* deteriorated, but in late summer the side branches are capital material for cutting; the greyish green and clean-looking foliage is very effective.

MUHLENBECKIA VARIANS.—It appears that this charming Polygonaceous, shrub-like plant is freer in flowering in the open air than the allied form *complexa*; for whilst I grow a six or seven-year-old plant of the latter in the most sunny aspect without getting flowers, a young plant of *varians* in a less favoured place, and only in its second summer, is now in bloom, and I hear that a young plant of it is also in flower in Berkshire. True, the flowers are not very handsome, but the waxy, transparent berries are exquisite, reminding one of the flowers of *Hoya carnea* with the divisions drawn forward. It seems strange that these delicate-looking, but quite hardy, plants are not more noticed and grown than they are. On the higher ledges of rockwork, where they grow into rounded heaps of black, thread-like stems, sparsely furnished with dusky little leaves, their effect is quite *Adiantum*-like. *Varians* has fiddle-shaped leaves, while those of *complexa* are nearly round. Along with erect-growing plants, such as *Roses*, &c., they make lovely twiners, and show a form of growth as uncommon as it is pretty. It must be a very severe winter that will cut them to the ground, whilst the trying ones of a year or two ago did not kill even young plants quite exposed.

GAULTHERIA NUMMULARIFOLIA is a gem which cannot be overpraised, and how beautifully it grows in a bit of moist peat and sand! There seems to be in this plant or shrub such a combination of good properties as one rarely finds elsewhere. It is distinct, free in growth and flowering, and evergreen. The flowers and fruit, too, are extremely beautiful, and are borne profusely even on young plants. From the slight manner in which the stems arch, the little white and crimson pendent bells can just be seen. In a dip in the rockery where moisture can collect it will be likely to flourish. I have hitherto grown all mine in a little shade, and they have done well and are just forming fruit. I am not, however, prepared to say that it would not do as well or better in full sunshine.

EULALIA JAPONICA.—This raised from seed proves to be a most variable Grass. From a packet named *E. japonica argentea vittata*, the greater portion are proving to be the typical form, but some have long tufts of down at the base of the blades; some again have silvery markings, as indicated by the name, and one or two have barred markings. Variety in this case, as in others, is interesting, and all are pretty. I fear this Grass cannot be considered hardy in Yorkshire. I have repeatedly lost it in winter. On this account I have potted my present stock with the intention

of wintering them in a cold frame, and from seeing their rapid growth and fine habit whilst in such quarters, I was struck with their adaptability for pot culture and table decoration. In their young state, when from 18 inches to 2 feet high, they equal, if they do not surpass, in beauty the most slender Palms.

CROCUS FLEISCHERI.—What a lovely Crocus this is! The slender, but erect, flower is of the softest purple. It appears without the leaves, but still it lacks not the pleasing contrast of green, as in *C. nudiflorus*, for the sheath is ample and of an Apple-green colour. The flower may be termed a self, as, unlike many other Croci, it is nearly the same in colour inside and out; the inner perianth divisions are less than half the size of outer ones. I have but one bulb of it, but it is healthy and well established. It has grown in a little shade for the last two years, so I think it may be classed with the autumn-blooming section. Crocuses in autumn give us almost as much pleasure as any flowers to be found in our gardens; they ease one's mind of wintry ideas, and rejuvenate our borders and beds when there is serenity and decay on every hand.

GENTIANA PNEUMONANTHE, in addition to being a distinct species, has a pretty erect habit and flowers very late, the bloom lasting quite a fortnight; moreover, the erect tubes have the good quality of being well coloured on the outside; this is a feature in the Gentians of some value. *Sep-temfida* and its varieties can only be seen to advantage when brought near the eye, so that the tubes can be looked into. J. WOOD.

Woodville, Kirkstall.

GLADIOLI.

EARLY FLOWERING VARIETIES.—These would include *G. byzantinus*, *G. communis*, *G. Colvillei*, and *G. ramosus*, to which may be added the dwarf *G. nanus*. These flower from April till June, and fill the blank until *G. brencleyensis* and the splendid hybrids of *G. gandavensis* make their appearance. Some complain of losing them and consider them not hardy; where there is a doubt, then some dry litter should advisably be strewn over the patches or beds when planted in autumn. February is too late to plant if you want early blooming. I have just emptied a couple of Pansy beds and planted a collection of Gladioli, retaining the best for potting purposes. Far and away the best for decorative purposes is *G. Colvillei* The Bride. I would commend this white beauty to any of your readers who interest themselves in church decoration. A few pots of this, containing, say, a dozen bulbs in bloom, dropped into vases, with a dark background, is a sight to remember when generally everything is dreary outside. After flowering, I plant them out, and if not required the following season leave them in the ground, merely top-dressing in autumn. Those treated in this way last year gave as fine bloom as those potted and protected in a frame, though later; but I admit last winter was exceptionally fine. All the other varieties are cheaper, and generally when planted take care of themselves for years.

LEMOINE'S HYBRIDS.—These are tall growing and vigorous, and have the recommendation of being perfectly hardy, having withstood the severe winter of 1880. Mr. Sinclair, of the firm of Laird and Sinclair, introduced them to Dundee with the view of their suiting the Scotch climate, but I do not think they can compare for a moment with the hybrids of *gandavensis* I shall name. Last winter was so mild that the tenderest Gladioli of any kind would have been safe planted out, and, if I mistake not, Mr. Brotherston wrote from Scotland to that effect, while Mr. Douglas, Ilford, discouraged by losing his most promising seedlings, left them out and in some cases had fine blooms the following season. This is all possible; but my contention is that such glorious flowers as the fine hybrids of *G. gandavensis*, such as those shown by Kelway and others and described in your columns, that might compare in colour-tinting with the grandest Orchid, deserve to be taken up, if only for the purpose of preparing the ground and

for manuring the following planting season. Now, a full measure of success cannot be attained without this preliminary preparation of the ground; so there is neither sense nor reason in leaving them out during the winter, even if there was no risk from frost. As the time for preparing the beds or borders has now arrived, I may fitly take next

HYBRIDS OF *G. GANDAVENSIS*. I believe almost any soil will grow these, but climate and as-

I had not the border I wanted to plant in ready before March, and at the time had nothing more suitable than fresh horse manure and litter. A hole was made, this put in, loam over that (a few inches), then a handful of sand—river sand I prefer—above and below the corm, and about 3 inches of clayey loam over all. I watered heavily with the view of the rapid decomposition of the fresh manure. The manure had fermented and rotted before the roots had descended to feed on it, and

G. gandavensis. A friend who had been at the late Dundee International Horticultural Show told me he saw as fine *Gladioli*, old and new varieties, in the stand of Mr. Campbell, of Gourrock, in the north, as he ever noticed with Mr. Kelway in the south. Therefore there is no reason whatever for the often told tale, "*Gladioli* will not succeed in our cold climate," or in this or that garden. This brings me to refer to aspect, which I consider of much importance. If you plant *Gladiolus gandavensis* at the back of your house beside a north wall, or in any other aspect where the sun cannot ripen the foliage, failure and degeneration are certain sooner or later. A sloping southern aspect with plenty of sand or silica in the soil to give stamina is, to my mind, the *beau idéal* of a position for the finest show *Gladioli*. The soil with me is a strong loam, but I add plenty of sand. Mr. Lombard, Rathmines, Dublin, has won the cup there for years, and he grows his *Gladioli* on a warm southern slope. He is probably the largest and most successful grower in Ireland (though I have in my mind some splendid spikes I noticed on the stand of the Rev. Mr. Tymons), and, what is of great importance, remembering the contrary opinions so often expressed, after trying French-raised *Gladioli* for years, he has given them wholly up for kinds grown in Somerset. I now come to make a few brief remarks on the

NEWER VARIETIES. Of these I would name first James Douglas, a robust grower and with very peculiar combinations of colour. There is crimson and white, and, as if this was not enough, rose shading off into purple and lavender. It seems destined to perpetuate the name of a very worthy grower. It has many colour tints in common with Duchess of Connaught, but with me one is a stronger grower than the other. Two other new ones were introduced last year of the rosy lilac combination of tinting—Lord Digby and Lady Cavendish; if the experience of others be like mine, neither will equal older introductions. A. F. Barron is a fine flower, but far outdistanced by James McIntosh, which it resembles, the ground colour with both being brilliant scarlet, the petals streaked or blotched white. Another, and a finer spike too, having a crimson body colour and light bluish stripe is Dr. Benson. Duke of Edinburgh I saw referred to at several shows as fine; if it comes at all near the Duchess it will be an acquisition. Lord Sefton resembles another great beauty, Mr. Derry, in having a salmon or amaranth colour and tall spikes. These were my only new ones, but I am bound to say they were far outdistanced by earlier introductions in several cases both as to size of individual blooms, length of spike, and the number of spikes to a single corm. One and one only had four perfect spikes from a single corm—Lamarck. This is an old variety; I cannot tell who is the raiser, but I received it from a London seedsman a few years since. The colours are a pleasing combination of light rose striped with salmon. Electra, Berthe Rabourdin, a good old variety and certain bloomer; Orphée, Mr. Thornton, La Fiancée, and a few more that I did not make a note of produced three spikes. The number producing two fit for show purposes—that is from the base—was considerable; among the rest, Democedes and Flora, both very similar; another, differing from the last two in the shading of purple with the salmon, was Herald. I like to mention those old-established kinds when they deserve it, as usually they can be had cheap and are most certain flowers, a fact likely to encourage young beginners. One of the finest I had last year, and that gave me two fine spikes also this year, was Brennus, many years in commerce, the colouring of which is unique. The upper petals are crimson shading to brown, splashed with blue, which becomes violet on the lower divisions. For the first time for years there has been no failure among the whites, though they are probably more tender and delicate; old *Mdme. Desportes* nodded graciously to the still more venerable Shakespeare, and both had to yield precedence to Reine Victoria, which is still an object of admiration with two 18-inch spikes. One of the shyest



Young tree of *Betula populifolia* (p. 292).

pect and proper drainage are much more *sine qua non*, so I will refer to these separately. Some of the most successful growers dig deep, and manure borders or beds during the month of October or November, with the view of having the best of it absorbed and incorporated therewith before March or April, so that then there will be no trouble except to plant. I use short stable manure and dig it in. I do not think it necessary to draw any hard and fast line for this purpose as to time. One year

my *Gladioli* that year did admirably; but had I time, an empty border, and some old hotbed manure, I should prefer preparing the ground now or within the next month. The method of planting stands the same, but the sand must not be forgotten.

CLIMATE AND ASPECT. —I will dismiss the first by saying I do not think there is any place in the British Isles, during a fine summer such as we are having, that will not grow admirable varieties of

bearers I have, and from which I never got a good spike since its introduction, is most inappropriately named after the famous rosarian, Canon Reynolds Hole. One of the reasons why I make these notes of individual flowers is that some of your Gladiolus-loving correspondents might kindly say if their experience is anything like mine. Canon Hole has but two companions in retirement out of at least 200 named varieties—Helenor and citrinus. I may have lost others, but I did not notice any blanks, while those I am rearing from spawn and seed are very vigorous and promising. If you plant early you have blooms early. To this rule there are many exceptions; three notable ones with me this year will be Duchess of Edinburgh, James McIntosh, and Mdme. Vilmorin, great beauties that will not bloom for a month to come. It only remains to say the earliest, and I am inclined to say the finest, spike I had this year was from Calliphon, a prince of rose colours.

STORING THE CORNS.—The time for this is coming, so I have left space for a line in reference thereto. Those that flowered in July and August may now be lifted if the foliage and stem are withered, not otherwise. I place them standing upright, stem and all, in a cool back room where frost may not enter, and cover the corms around with a layer of moist river sand. Here stems and corms gradually ripen and dry and need not be disturbed, except for labelling or examination, until the time for planting comes round.

Clonmel.

W. J. MURPHY.

AURICULA COLONEL CHAMPNEYS.

I AM reluctant to interfere between "Delta" and "H. S. B." in THE GARDEN (p. 259), fearing lest I may appear to endorse "Delta's" far too flattering account of my garden. But as an old Auricula grower, and one who has got among good judges the character of being very particular and hard to satisfy, I am bound to say that "Delta's" estimate of Auricula Colonel Champneys quite coincides with mine and that of all the most competent judges and growers in England and Ireland. "H. S. B." professes that he writes for Auricula growers. Well, then, "to the law and the testimony" let us go, and I would ask, when has Colonel Champneys been found in any winning class outside the class of fifties, where spectacular effect, not individual quality, is the thing chiefly sought? A class of twelve or of six in which Colonel Champneys figured would have but small chance of taking honours. It is true it is pretty; where is the Auricula that is not pretty? And it is a good grower and a good trusser; but surely, when writing for Auricula growers, "H. S. B." might recognise the necessity of those points which go to make up a good Auricula of the florist's type, in every one of which points Colonel Champneys is deficient. It has a pale tube, as dead as the eye of a fish three days killed. It has a poor, dull paste; the body colour, which is attractive enough, and always especially so to those who confessedly know nothing about Auriculas, is so utterly irregular, so much in excess of the due proportion, and so runs out in corners to the edge, as to look like a blue star instead of a circle. Added to these defects, the substance of the pip is miserably thin, and the flower gets worse and worse each day it is open, and "dies very badly," as we say.

As a matter of taste "H. S. B." is of course not to be questioned in his liking Colonel Champneys, but I challenge him to find one competent judge to say that it deserves to find a place among crack kinds. I do not say, however, that I could find it in my heart to throw it or any other Auricula on the rubbish heap.

I am sorry that "H. S. B." should think fit to charge "Delta" with ignorance and incompetency for what he might easily have seen was a printer's mistake. "Delta" did not give the name of the raiser of any of the sorts mentioned, and it would be less likely that he should have omitted from any enumeration of crack kinds that best Auricula yet grown, George Lightbody—commonly called for shortness Lightbody—than that he should have been ignorant that Acme was raised

by Read. This is not the spirit in which lovers of flowers should treat each other.—FREDERICK TYMONS.

—Colonel Champneys has not one good point to a florist's eye; the pip is not flat, the eye watery, the ground colour very brilliant, but so running into the edge as sometimes to leave but little of that to be seen. It is showy, but so are alpinas. Your correspondent, too, is mistaken in supposing it to be the first of the blue grounds ever sent out. Chapman's Maria and Sophia were out ages before it, and it was probably a seedling from one of these. Will your correspondent kindly look through the winning flowers at either of the northern or southern Auricula exhibitions, and see if he can find either it or General Neill on the winning stands or amongst the single class plants (in the class for fifty anything is admitted)? I did not call Acme Lightbody's; what I wrote was Acmes, Lightbodies, the ordinary way in which we call George Lightbody; the apostrophe was a misprint. I may inform your correspondent that I have been an Auricula grower for fifty years. I saw Acme years before it came out, and described it in a contemporary as probably the best white edge ever raised, at present not far out. It was raised by my late friend, Mr. Read, of East Dereham. I have grown every Auricula probably from old Popplewell's Conqueror to Alex. Meiklejohn, and have known personally nearly every Auricula grower in the three kingdoms, and I can only hope that experience may enable "A. S. B." to become a better judge of an Auricula than to admire Colonel Champneys as a good flower.—DELTA.

The Japanese white lance-leaved Lily.—There are at least two varieties of *L. speciosum album*—that from Japan and Holland; and in regard to the colouring of the petals, one is pure white, with the central midrib of each petal beautifully tinted green, very much like the shading of the Eucharis Lily. I have a fine specimen at present blooming in an 8-inch pot without a shade of pink, back or front, but having another peculiarity different from any *L. lancifolium* I have hitherto seen. From near the base of each petal start a number of white filaments not exceeding a quarter of an inch long at most, pure white, and forming a fringe-like appendage around the stamens. Perhaps you would kindly say if Krætzner's Lily, also pure white, referred to at page 246, is similarly furnished. [Yes.] Mine has flowered for the first time since it arrived from Japan, and may be incorrectly named.—W. J. MURPHY, *Clonmel.*

SHORT NOTES.—FLOWER.

Erica Maweana.—When botanising on the lower mountains of the Western Pyrenees near the towns of Hendaye and Iruu I met with this plant in considerable numbers. It was growing in fine tufts on grassy slopes at from 1000 feet to 2000 feet elevation.—R. POTTER, *Ulgate, York.*

The white Ramondia.—This rare plant, engraved for THE GARDEN (p. 129) after a photograph taken in Mr. O. Forster's garden at Lehenoff, in Austria, is only obtainable at M. Froebel's nursery at Zurich. We understand that he has been working for some eight years to secure a small stock of it.

Senecio pulcher.—In reference to "J. M.'s" note on this Senecio in last week's GARDEN (p. 283), can it be that the saline particles accompanying a sea mist are hurtful to the blooms of this fine plant? I ask because it does so well with me, and I have, alas! plenty of fog and mist to deal with. Last autumn it continued blooming right into the winter.—H. STUART-WORTLEY.

Sympathetic variegation.—One or two examples of variegation by sympathy may be found in back volumes of THE GARDEN. One (the first) is that of a variegated Rhubarb planted two or three plants among common Rhubarb; next year they all came variegated. Another, given by Harrison Weir, is that of variegated Ivies intertwined with green Ivies, causing the green to variegate.—FRANK MILES, *Shirhampton, near Bristol.*

Yellow Carnations scentless.—How is it that yellow Carnations, at least a good many of them, are without fragrance? The variety named Pride of Penshurst, favourably noticed a few weeks ago, is destitute of scent, and so are all other yellows, I am told by raisers. Curious, if true, this, for the other colours are more or less all fragrant, although some varieties, like W. P. Milner, have not much scent. All the old Clove section possess a strong fragrance.—V.

Fine tree Rhododendron.—We have a fine specimen of *Rhododendron arboreum* growing in our grounds. It is 12 feet 9 inches in height and 14 feet 4 inches in diameter; the stem is 3 feet 3 inches high from the base to the branching out of the branches, and 28 inches in circumference. It is growing in a tub and does well, being one mass of flower every year at the proper season.—J. LINDEN, *Ghent.*

* * An excellent photograph which accompanied this account showed clearly what a grand tree this *Rhododendron* makes as a standard.—ED.

Zinnias.—These rank amongst the most useful of annuals. Sown in a gentle heat in March, and planted out about the end of April, they begin blooming in June and continue to flower profusely until November. The flowers are both double and single. The plants grow from 6 inches to 18 inches in height, and they are well adapted for either flower garden or mixed border decoration. Masses of the individual colours are extremely effective, and mixed groups have a charming appearance. Our plants never appeared to feel the effects of the intense heat in summer, and now when it is raining freely the blooms are as bright and beautiful as ever.—J. MUIR, *Margam Park, South Wales.*

Diseased Hyacinths.—We herewith send a few bulbs of early white Roman Hyacinths, which, you will notice, have a gum exuding from their crowns. This is a kind of disease which sometimes shows itself some time after the bulbs have been imported. If you cut one open you will see that a kind of dry rot has set in, and we believe that bulbs when once attacked never flower, the gum forming a kind of seal which the shoot cannot penetrate. The disease seems very partial in its attacks, one small parcel of bulbs being infected by it, whilst larger lots from the same importation do not show any signs of it. It seems to us that keeping the bulbs in a dry place favours its development. Do you think that it would be caused by the bulbs being taken up before they are properly ripened off? The awkward part of the matter is that the bulbs look healthy when first imported, and considerable loss is entailed by their going bad after passing into our customers' hands. Any information you can give respecting this disease will be welcome.—SEEDSMAN.

* * The gumming appears to be caused by the presence of a minute fungus which grows in the heart of and between the scales of the bulb, and sometimes outside the bulb. The spawn or mycelium of the fungus also grows luxuriantly in the gum. The fungus is an exotic and, as far as we know, an undescribed minute, but very distinct, species of *Verticillium* with an enormous number of very small spores. The fungus is of course imported with the bulbs, and as it appears in every instance to invade the heart, flowering is, as you indicate, impossible. The bulbs are no doubt imported in a diseased state, although the disease does not at first show itself. Whether the growth of the fungus inside the bulb and consequent gumming is aided by keeping the bulbs in a dry place is more than we know; the subject requires investigation. Some species of *Verticillium*, although beautiful objects under the microscope, are only larval conditions of other fungi. The diseased bulbs are perfectly worthless, and they should be destroyed, as they doubtless have the power, by contact, of setting up gumming in sound bulbs.—W. G. S.

Reseda fruticulosa.—Whether this plant has been rightly or wrongly included in the British flora I know not; Babington makes it a British plant, but Lindley and Bentham do not. I am not, however, interested in that question; what I want to state is that for some time I have had this plant under my notice, and like your correspondent (p. 283) I have often thought that a clever hybridist ought to be able to impart to it some of the fragrance of our ordinary garden Mignonette. If this could be done we should then have a tree Mignonette in every sense of the word. Even in its present form it is not, how-

ever, altogether unattractive. I have a plant of it now 3 feet in height with stout side growth, giving it quite a stately appearance. As a wilding, I believe it to be rare, but it sometimes occurs in Somerset and Cornwall. My specimen of it, though a weed, has pleased me so much that I intend to cultivate it. My supply of seed is limited, but I shall be happy to enclose half-a-dozen seeds to about the same number of applicants if they will send me a directed and stamped envelope.—J. C. CLARKE, *Cothelstone, Taunton.*

LILIUM CANDIDUM.

It would appear to be a matter of some difficulty to indicate the precise conditions under which the old white Lily thrives best. Soil has undoubtedly much to do with its welfare, and yet it will often be seen behaving quite differently in two gardens which close to each other apparently enjoy the same advantages or otherwise of soil and climate. In some of the cottage gardens in this neighbourhood it grows and flowers with much freedom; in others it never seems to gather strength enough to throw up any bloom worth speaking of. Some say it needs, like most Lilies, partial shade; others assert that the bulbs want to be in a measure ripened by the sun, but I have seen it doing well in both sunshine and shade. The finest lot of plants of the white Lily I ever saw was last year in Hampton Court Gardens. They were certainly remarkable as regards development, and when in flower must have presented a gorgeous appearance. There were about fifty clumps altogether in one bed on the Grass, each clump producing from four to a dozen flower-stems, many of them being as thick as a broom-handle. When I saw them they were just showing bud, the foliage was abundant, and, what is so rare in this Lily in perfect health, quite down to the ground. I had no opportunity of learning how long these bulbs had been in position, but I should imagine several years. I do not think that they could have come to such strength in one season after planting. It is rather curious that this remarkable Lily bed should be very near to the great Vine, and I have since thought that the great depth of soil and perfect drainage, to which may be attributed the health and longevity of the Vine, may have contributed to the uncommon development of the Lilies. The soil of the Hampton Court Gardens is a light, very gritty loam, resting, I believe, on a bed of gravel, and as the Thames flows many feet beneath, the drainage must be perfect. Under such conditions, it is evident that a large amount of roots would be formed and retained, and the bulbs would naturally acquire great strength. A firm, but porous soil, with a ready exit for superfluous moisture through the winter months, would therefore seem to be a condition of success. Shade does not appear to be a necessity, for these Lilies were in the full sun. A curious point in connection with this Lily is the way in which the foliage and stems often die away suddenly just as the flower-buds have formed. A friend of mine planted out a bed with strong bulbs in, to all appearance, an excellent position. They grew finely until they were just coming into bloom, and then both leaves and stems turned black right down to the bulbs, which, however, remained perfectly sound. Would a too rich soil cause this? I think my friend used a little rotten manure when planting, having made up his mind to "do them well."

J. CORNHILL.

NOTES ON HARDY FLOWERS.

POLEMONIUM CONFERTUM.—It is a pleasure to handle this rare plant with its pretty crisp young leaves in summer. I say in summer because it is then so easy to manage, whilst at any other period, according to my experience, it is almost sure to die if meddled with. The offsets may be taken as they show above ground around the old plant, and if potted and placed in the sun, plunged, they grow right away. No manure or half-decayed matter ought to be used. The offsets should have the bases of the leaves well out of the mould, and

water be given very sparingly. This is very simple treatment for a plant of such value and rarity. I find it very hardy, but young plants from pits should not be set in the open in late autumn like rougher herbaceous things. If turned out in April and planted in free soil, there need be no fear of its doing well.

GALIUM PURPUREUM, with its dense mass of foliage and little flowers, is not so very attractive as seen growing, but a few twigs or sprays cut are truly handsome. The minute star-like purple flowers from their numbers fringing the outer portion of the feathery sprays only seem to impart a rich and changeable hue to the finely-cut and verticillate foliage of this Bedstraw. As a vase decoration it cannot fail to please, because it stands well, is very light and graceful, and capable of matching the most delicate flowers; indeed, it seems to be purely a plant for cutting from, which may be done even before it comes into flower, when it much resembles the climbing Asparagus. Some bits of Delphinium cardinale and Tropaeolum tuberosum added to it constitute an exquisite blend for small glasses. I should like to repeat that it is hard to over-praise this plant of a common genus as cutting material. Whilst speak of cut foliage, one may be allowed to name the old and tinted foliage of

AQUILEGIAS. Amongst a gathering of coloured leaves, young and old, these were some of the more noticeable. Not only is the form desirable, but as flowers get fewer we may by chance on some occasions bring in a sunburnt remnant of a spring favourite.

PRIMULA STUARTI enjoys our warm summer, provided it is kept well watered in a shady place, and planted in sticky peat and sand; a root not only flowered fairly well, but made fine growth, affording four offsets. The latter were potted in the early part of July and kept out of the sun for a fortnight; their young leaves, which are much in the way of those of *P. sikkimensis*, are very handsome. There is nothing of a miffy character about this Indian Cowslip; indeed, it seems to be a rampart grower when once it finds genial conditions.

J. WOOD.

Rudbeckia maxima.—I had written a notice of this, but "K." I see (p. 283), has forestalled me. It is, indeed, a fine plant; out of eight species of *Rudbeckia* grown here, it is far away the best, and justly claims a place in every collection of robust perennials. "K." is, however, wrong in recommending such a very dry place for it on the top of a rockery. Here it is in a border with a moist subsoil in a sunny and sheltered position where this summer it has reached the height of 8 feet. The plant is of fastigate habit—that is, it grows quite upright and compact. The flowers, which are 6 inches across, are set on naked stems 3 feet above the topmost leaves, and are perfectly horizontal with a great conical disc standing out of the centre, a characteristic of the family. Although there is no succession of bloom, it remains in perfection a considerable time. Altogether it is one of those plants that take the eye at a glance. The irregularity of the rays complained of by "K." is only exceptional here. In his case may not this be the effect of the very dry situation allotted to it? Slugs are very ravenous after the young growths in the spring, and can only be kept at bay by the frequent use of lime and soot. *R. laciniata* is another good species. It grows 7 feet high and has large compound foliage and numerous flowers, but much smaller than those of the first-named kind.—J. M., *Charmouth, Dorset.*

Montbretia Pottsi.—We have growing here, in a border, a clump of this plant quite a foot across. It has been in the same place for these last three or four years, and has only thrown up two spikes, and that was two years ago. It grows well and the stems look strong enough for every one of them to bloom, but the result is as first stated. We have this season given it a large quantity of water, thinking we had been too sparing in this way, but without effect. The soil is

light and sandy and about 2 feet deep, resting on gravel. Every autumn we give the border a good top dressing with old spent hotbed material and fresh soil mixed together. This is applied in the first week in November and three or four good waterings with liquid manure and a sprinkling of guano two or three times during the summer are also given. Our soil is so poor that we are obliged to feed liberally in order to keep our borders gay, a state in which we like to have them from the blooming time of the Crocus, Chionodoxa, and Aconites till the autumn flowers are destroyed by frost. This can be done by a little management and liberal treatment. Can it be that we are too liberal to our *M. Pottsi*? Will some of your readers give their experience in regard to this plant, and state if it blooms satisfactorily with them? It is disappointing to see so grand a plant flowerless. The Siberian Larkspur, Scotch Rocket, three sorts of *Eranthis*, and other hardy plants do grandly with us.—JOHN CROOK, *Farnborough Grange.*

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 276.)

OLEANDRA.—This, though not an extensive genus, comprises some of the most interesting of climbing Ferns of epiphyll habit; *O. nerifolmis*, a plant much more like an Oleander than a Fern, is, however, an exception. This grows somewhat in the way of *Gleichenia flabellata*, but has thicker and more fleshy erect stems, which have, moreover, the peculiarity of branching out freely and of being provided with aerial roots, a character not to be found in any other cultivated Fern. All the other species make good specimens either trained upon stems of dead Tree Ferns, which they readily ascend and quickly cover, or on mounds of peat. None but very fibrous peat should, however, be used; thick turves of it should be placed one above another, and skewered together by means of wooden pegs so as to form a pyramid. Another way of employing Ferns belonging to this genus is to use them for covering pillars indoors; but as they take possession of any genial surface, fastening themselves to it with short fibry roots, it is indispensable that these should be provided with proper nourishment as the rhizomes extend. The best way is to put round the pillar a wire cylinder, which should have large meshes, and be filled up as the rhizomes extend with a mixture of two parts of fibrous peat to one part of Sphagnum rammed tolerably close. For hiding pillars, walls, or unsightly upright supports the Oleandras are quite as useful as the better known *Davallias* and do not require any special attention; although, perhaps, not quite such rapid growers they possess the advantage of retaining their foliage longer than most *Davallias* do. All the Oleandras known to cultivation require stove treatment and abundance of water at the roots throughout their growing season, and they are greatly benefited by occasional syringings overhead during summer.

O. ARTICULATA.—This evergreen species from the East Indies and Mauritius is one specially adapted for growing on small pyramids of peat. It is one of the smallest habited of the genus and looks well covering the stem of a dead Tree Fern; being a climbing species, whose somewhat slender rhizomes rapidly spread over any decaying matter. Its fronds are of a pleasing shade of light green and the venation exceedingly pretty.

Fronds simple, entire, linear-lanceolate in shape, seldom more than 10 inches long by about 1 inch in width; they are produced about 2 inches apart on the creeping rhizomes, from which they hang gracefully. Barren and fertile fronds of similar shape and size with the soil, on the latter forming a regular line of orange-brown dots all along each side of the midrib, which line in fully grown specimens is quite uninterrupted.

O. CUMINGI LONGIPES.—This singular species, a native of Assam, Luzon, Burmah, &c., is easily distinguished from all others by its comparatively small rhizomes, which seldom exceed the dimensions of a quill pen. The peculiar conformation of the stalks on which the fronds are borne is another equally striking character; they form,

about 2 inches above the rhizome, a sort of joint, from which, when exhausted, the frond becomes detached, leaving the short lower portion of the stalks adhering firmly to the rhizomes, which are densely clothed with brownish scales closely imbricated. The length of the stalks and that of the leafy portion of the frond are about equal, varying from 10 inches to 15 inches, according to the vigour of the plant.

From a thickly scaly creeping caudex appear firm, membranaceous fronds lanceolate-acuminate in shape, very much attenuated and gradually decurrent at the base. These are borne on slightly downy stalks provided with an articulated base, and their costa or midrib and veins are slightly pubescent. The sori, rather large and of a light brown colour, generally form a single and scarcely interrupted line very close to and on each side of the midrib, although in some instances they may be found scattered irregularly at a little distance from it. Colour of the plant dark green.

O. MUSEFOLIA.—A very pretty species, a native of Ceylon and the Malay Islands, and one which, though introduced a good many years ago, is still scarce in cultivation. It is a plant of dwarf, compact habit, and is best adapted for growing on mounds of peat. The stalks are articulated near the base, as in the species above described, but the shoots are different in texture, being more woody than those of any other dwarf-growing kind, wide, climbing, and clothed with depressed scales, curving upwards to where it bears its fronds singly or in tufts of from 2 to 5 and then downwards.

Fronds of membranaceous texture, lanceolate acuminate in shape, narrowed gradually towards both ends, generally naked, with the midrib only slightly pilose; these are borne on stalks short and articulated close to the base. The sori, which are very prominent, are disposed in two irregular rows, one on each side and close to the midrib. The whole plant is of a fine dark green colour.

O. NERIIFORMIS.—This, the most striking species of the genus, possesses a wide habitat. It is found in a wild state all through tropical and sub-tropical Asia, Java, Luzon, Assam, Khasya, even Sikkim and Nepal, and also in the Fiji Islands. Its mode of growth is peculiar, being distinct in this respect not only amongst Oleanthers, but likewise amongst the whole family of Ferns. Its rootstock, which branches freely, bears its fronds in tufts, which are hard in texture and erect, growing to 4 feet or even 5 feet in length, and as thick as one's little finger; they are nodose at irregular intervals, and covered with the remains of scales, which in the older portions are of a black and shining hue. A peculiarity of these caudices is that they are generally found intertwined like a cluster of snakes. Some are erect, while others lie more or less close to the ground, and throw out long, wiry roots in greater quantities than those of upright growth. In the young shoots the appressed scales, which sometimes form a tuft at the very apex, are subulate, ciliated, and of a reddish colour, differing essentially in that respect from those of mature shoots. The fronds are produced in threes or fours at or near the summit of the young terminal shoots, or sometimes from short side branches, which are also very scaly. They are of a bright yellowish green, glabrous or a little villous on their under-surface, and smooth at the margin. The stalks on which these are borne are different from those of all other species, inasmuch as they seldom exceed half an inch in length, and are equally nodose and jointed at the base, but here, and contrary to other species in this genus, the joint is generally hidden by the scales of the caudex which surround it—one of the most characteristic marks of this species as curious as it is interesting.

Fronds verticillate, membranaceous, entire, costate, lanceolate in shape, rather broader above the middle, acuminate, moderately attenuated at the base into short spikes of scaly nature and scarcely half an inch long. Sori plentiful, generally situated at some little distance from the midrib and disposed with so much regularity as to form an almost uninterrupted light brown line, straight or a little waved on either side of the costa and at a little distance from the base. The leafy portion of the plant stands out like so many large fans, and presents a character entirely different from any other Fern in cultivation.

O. NOBUSA.—A very pretty species from the West Indies and Guiana, where it was found in a wild state, entirely covering the stems of dead trees. It is of medium size, of a cheerful bright green colour, very ornamental and free growing, especially when planted on half-decayed vegetable matter. The venation of the fronds is particularly

attractive, and very conspicuous when seen from below, as they are of a semi-transparent, though coriaceous, texture.

Fronds simple, entire, lanceolate in shape, from 10 inches to 15 inches long and about 1 inch wide, slightly undulated. They are abundantly produced from a slender creeping rhizome, densely clothed with imbricated scales of a silvery hue when in a young state, but turning to a light brown with age. The short stalks on which they are borne are articulated near the base, and, like the rachis itself, of a black or dark brown shining colour.

O. WALLICHI.—This thoroughly distinct and somewhat scarce species comes from Nepal, North India, from Simla in the west to Bhotan in the east, Assam, Khasya, and Java. Although of the same habit and similar mode of growth as the other above described species, it greatly differs in general aspect from any of them, the principal and most distinctive character being the margins of its sub-elliptical oblong fronds, which are furnished with numerous short hairs on all their length. These fronds, which grow from 8 inches to 14 inches long, are produced abundantly from a branched, creeping caudex rather thicker than an ordinary lead pencil, which is densely clothed with subulate, crisped, spreading, and often deflexed scales, thickly tufted at the extremity of the branches, and of a ferruginous colour. They are generally about 2 inches distant, and borne on short stalks jointed close to the base, so that the very short lower articulation is concealed among the scales, and of a dull green colour.

Fronds entire, simple, of membranaceous texture, sub-pellucid, opaque on the surface, with sides parallel; their base is often obtuse and rounded, while their apex is sharply acuminate. Sori compact, almost imbricated in a continuous line or chain close to and parallel with the costa on each side. Rhizome slender, and particularly rough on account of the chafy scales with which it is densely covered.

PELLICA.

PARKS & PUBLIC GARDENS.

OPENING OF CANONBURY SQUARE.

OWING to the efforts of the Metropolitan Public Garden, Boulevard, and Playground Association the enclosure in another London square was last week thrown open for the use of the public. Following the example of the Duke of Westminster in the case of Ebury Square, Piccadilly, the Marquis of Northampton has leased to the association named, of which Lord Brabazon is president, about an acre and a-half of garden ground in Canonbury Square, Islington, at a merely peppercorn rental. The society has supplied it with seats, and they will provide a caretaker; but they hope that before long the Islington Vestry—now busy in converting the old parish churchyard into a public recreation ground—will take charge of the open space in the square, which is situated in a densely-populated district. Save Finsbury Park, which is on the very fringe of the borough, the inhabitants of North London, who in Islington alone number 300,000, have really no considerable recreation ground; and the want is plainly apparent of more open spaces for the public in this neighbourhood has stimulated the local authority conjointly with the Metropolitan Board of Works to seek to preserve Highbury Fields for their benefit. Lord Brabazon, who moved a vote of thanks to the Marquis of Northampton for his kindness in throwing open Canonbury Square to the public, expressed a hope that many landlords who owned open spaces in the metropolis would follow the good example set by his lordship and by the Duke of Westminster in regard to Ebury Square. Lord Northampton was desirous of similarly throwing open other squares in that neighbourhood, and he trusted that his lordship might be encouraged to do so by the good and orderly conduct of those who frequented that square. Dr. Farr declared that the death-rate of a population was in proportion to its density; and if they looked round and saw how vastly London was extending in all directions, if they considered how one after another the open fields were being encroached upon by buildings, if they noticed how even the few open spaces in their midst were gradually being covered with buildings, they must conclude that, if Dr. Farr's dictum were true, the health of London must in the end greatly suffer. That

was a very serious consideration. It was one which must not only appeal to the inhabitants of London but also have very great force in the minds of all who had to do with the government of this country. The association with which he was connected had no intention of permanently maintaining Canonbury or any other London square. The funds at its disposal would not enable it to do so. Its object was to encourage the municipal and local authorities to do their duty and take care of these squares, supplying trustworthy caretakers.

GARDEN FLORA.

PLATE 460.

LESCHENAULTIA BILOBA MAJOR.*

It is often complained that nearly all the beautiful Australian and Cape plants which found favour everywhere about a dozen or more years ago have disappeared from amongst the favourites for the greenhouse and exhibition tent, and have been supplanted by others far less ornamental in character, but which are not nearly so difficult to manage as many of the lost ones were. No doubt there went with the crowd of discarded hard-wooded plants not a few of exceptional beauty, but so far at least as regards a large proportion of the crowd, horticulture has gained by their disappearance, for after the expenditure of much care in their cultivation, the reward in the shape of real beauty was often very meagre. The Leschenaultias, however, have both beauty and distinctness to recommend them for a place in every greenhouse or conservatory, the little extra attention which they require being as nothing when weighed against the bright-coloured beauty of their flowers and the length of time during which they remain in perfection on the plant. A glance at the annexed plate will convince our readers of the truth of this statement as far as regards *L. biloba major*, and in the following description it will be seen that there are several other species of equal merit with that figured.

The genus *Leschenaultia* is the only one included in the order Goodeniaceæ that finds favour for garden purposes. It is confined to Australia, and although the flowers of the plants in cultivation here are not variable in colour, we are told that in their native wilds each species varies so much that white, lilac, light purple, blood red, scarlet, pink, and rose-coloured blossoms are borne by plants belonging to the same species. All the cultivated kinds are low-growing plants of shrubby habit, with a general resemblance to some of the Heaths in the form and disposition of their foliage, which is, however, of a much more fleshy nature than the leaves of *Ericas* are. *L. biloba major* grows to a height of 3 feet, and is, perhaps, the most robust of the cultivated kinds. Its branches and flowers are so well represented in the annexed plate, that it is unnecessary to describe them. The flowers open in June and remain fresh and bright on the plant for about six weeks. A well-flowered specimen of this plant is one of the most beautiful objects imaginable, and as its colour harmonises so well with almost every other coloured flower, the effect of the plants amongst scarlets and yellows, which are always plentiful in June in the conservatory, is always telling.

L. LARICINA, generally known as *L. splendens*, bears terminal corymbs of bright scarlet flowers, which are about an inch across, and are composed of five equal segments, resembling the flowers

*Drawn from plants sent by Mr. Balchin, Hasstock's Nursery, May 20.



of a scarlet Pelargonium. A well grown plant of this species has been known to bear over 300 flowers expanded at one time.

L. FORMOSA (syn. *L. Baxteri*) bears flowers of a bright salmon colour, and, with this exception, bears a close resemblance to the last mentioned species.

L. LINARIOIDES (syn. *L. arcuata*) is distinguished by its large bicoloured flowers, the segments of which are divided into two sets, the three upper ones being large, spreading, and pale yellow, and the two lower, which are smaller than the others, are folded over each other so as to form a sort of lip which encloses the curved style; in colour they are reddish purple.

About three months ago Mr. Balchin, of Brighton, sent to THE GARDEN office two healthy well-flowered specimens of the plant here represented, and we suspect that our illustration will be as agreeable a surprise to many of our readers as the plants were to us when they arrived clothed as they were in their beautiful bright blue flowers; for although introduced into English gardens more than forty years ago and for a long time popular as a conservatory and exhibition plant, *L. biloba major* seems lost to cultivation, and is, we suspect, all but forgotten by many who knew it and grew it a generation ago.

For the cultivation of *Leschenaultias*, the following information obtained from Mr. Balchin, supplemented by a few words on training, &c., will be found all that is necessary to ensure success: "In April the young growths are taken off about 2 inches in length and made into cuttings, care being taken not to bruise the wood. They are then inserted in 5-inch pots filled with crocks and a mixture of peat and silver sand; about twenty cuttings are put into each pot; they are then placed in a warm propagating pit, where they strike root in about a month. Care must be taken to keep them well shaded from the sun. As soon as rooted, the plants should be potted in a mixture of peat and sand, and kept close for a little time; they should then be removed to a cooler house, as, for instance, a Heath house, and gradually exposed to sun and air. They should be kept well pinched back to make them bushy, or they will grow tall and thin. Great care must be taken not to overpot them." The foundation for good specimen plants being thus obtained, the next step is to grow the plants on to full size. As the shoots lengthen they should be tied out almost horizontally, so as to induce them to break laterally, and any forward shoots should have their points pinched out. Vigorous growth commences with *Leschenaultias* early in the spring, when the potting should be seen to; a mixture of good rich peat, three parts, and silver sand, one part, is always best for them. After potting a temperature of about 55° is suitable for these plants, but as they grow rapidly it may be necessary to repot them again before the summer is over, and this must be done carefully without disturbing the roots, and be followed by close treatment for a week or two until they root into the new soil. A frame or light greenhouse where the sun may be allowed to shine upon them all day is the best position for growing *Leschenaultias* during the summer months. In the winter they should be housed where the temperature does not fall below 45°, and where the atmosphere is dry and ventilation free. The frequency of the attacks from mildew suffered by *Leschenaultias* when kept in a close moist house in winter entails close atten-

tion to airing and watering during winter. In the summer the soil should be kept always moist without ever becoming soddened or sour, and a sprinkling overhead with a syringe should be given in the afternoon of all bright days. If mildew attacks the foliage, a dusting with flowers of sulphur on several successive mornings must be given, and the ventilation and temperature of the house examined, for it is either the one or the other which, when badly managed, produces mildew on the leaves of *Leschenaultias*. B.

SEASONABLE WORK.

FLORAL DECORATIONS.

THERE are still quantities of outdoor flowers from which to draw a supply for indoor decoration. With us Hybrid Perpetual Roses have been most serviceable of late, and so also has the old, but well tried kind, *Souvenir de la Malmaison*. All of these we arrange by themselves, only adding thereto a few sprays of Maiden-hair Fern, and occasionally some heads of Mignonette. For some time past we have used single *Dahlia*s for indoor decoration and find them most valuable. Seedlings raised this spring are still flowering freely, and bid fair to continue for some time yet to come if frost spares them. As a background to these two or three sprays of the bronzy shoots of *Berberis Aquifolium* are a great assistance. Our groupings are made for a sideboard, and, therefore, to one face, for which purpose these flowers are well adapted, bearing in mind to secure as long stems as possible when cutting them. A few even with unexpanded buds are a great help; do not forget, moreover, that quantity will not give the artistic effect that can be derived from a small number well arranged. *Anemone japonica* and its varieties are evidently becoming more appreciated than was the case a few years back. There is not, we think, a better herbaceous plant grown than this for floral decoration at this season of the year, lasting as it does a fairly long time in a cut state. These *Anemones* are very pretty for specimen glasses, and the white kind is valuable for working into wreaths and crosses. The dwarf form of *Scabious*, of which there are several colours, is another excellent indoor flower now greatly assisting us, the light and dark kinds being particularly striking. We find these to arrange well with spikes of that valuable autumn flowering Grass (*Eragrostis elegans*), which has been in constant request with us for some time past. For tall epergnes or trumpet vases, we have also used *Love-lies-bleeding* (*Amarantus caudatus*); this, associated with some richly coloured sprays of the Virginian Creeper and a few blossoms of the white Japan *Anemone*, forms an excellent autumnal arrangement. If a piece or two of the growth of *Passiflora corulea* can be had with flowers expanded and entwined with the Virginian Creeper so much the better. We are now cutting the handsome blossoms of *Passiflora quadrangularis*, which if secured early in the morning remain open in most cases till the evening of the second day. We place them in finger glasses about one-third filled with water: though not natural as regards position, it is the best way we can devise to show off their beauty to the best advantage.

INDOOR PLANTS.

STANDARD HABROTHAMNUS.—Although this plant is particularly adapted for furnishing walls and pillars, and where so grown and planted out no doubt it gives the greatest quantity of flower, still it is a most useful subject in the form of standards, with a fair amount of pot room, say 10 inches to 14 inches. Thus managed, it can be used with effect to relieve the even surface too often apparent where dwarf plants are almost exclusively grouped together. To keep specimens of this form in shape the heads should be freely cut in from time to time; as it is all but a continuous bloomer, there is no particular season in which to cut it in, but plants that keep on flower-

ing through the summer should now have the shoots well shortened back. If after this they are kept in a warm greenhouse or intermediate temperature they will push freely and flower towards spring. Examples cut back early in summer, and that have been well sustained at the root, will now be furnished with abundance of shoots, and if kept in a genial temperature they will flower freely through the autumn.

LAPAGERIAS.—Large specimens of these, especially when the roots are confined to pots or boxes, are often found after a few years to cease flowering satisfactorily. It is in the nature of these fine climbers to require much more root room than many things need. The ability to bloom freely will generally be found proportionate with the strength of the growth which the plants are able to make. Now whilst they are in bloom it will be well to note whether there is any falling off in the strength of the shoots or flowering, and to rectify any deficiency either by larger boxes or turning the plants out in a prepared bed. Where either of these courses becomes necessary it is well to carry it out at once or as soon as the flowering is at a close, for if the giving of additional root space is put off until near the time when shoot growth commences, next season's progress will be much interfered with. If the roots have more room given them now they get hold of the new soil, and are in a position to sustain top growth as soon as it commences.

ANTHURIUM SCHERZERIANUM. The time of making growth and also flowering with such plants as this is in a great measure dependent upon the amount of warmth to which they are subjected, and the potting, when required, frequently gets put off through a reluctance to disturb the plants when more or less in bloom. It is a great mistake to keep this bright-flowered Aroid in a hot stove temperature, as is often done; it produces larger leaves and proportionately larger flowers in the intermediate heat, say from 48° to 55°, during the autumn and winter. Where the summer temperature is proportionate with this, it will make the most leaf growth through the autumn months up to the end of the year. There are few plants with which it is so necessary to thoroughly remove the old soil as this, an operation to which it should be subjected every two years. This is particularly the case with large specimens, the soil of which is most liable to get sour and sodden. Any plants that are at all in a doubtful condition in this respect should even yet be shaken out and have the soil renewed. They will keep on rooting in the new material through the winter.

DIPLADENIAS.—Those who grow the small-flowered *D. boliviensis* cannot fail to have noticed its distinct habit of growth so different from that of the other stronger growing sorts, both species and hybrid varieties. The Bolivian species is very suitable for training up a rafter in a stove kept at medium temperature, for although the plant will bear strong heat, still it grows and flowers freely with less warmth than any of the other kinds, and moreover is mostly less liable to go off at the root if it gets a little over much water in the way the other sorts do. It would be difficult to say too much in favour of its flowers for cutting. Their colour, pure white, with a small lemon-coloured eye, coupled with a long tube, admit of each flower being cut singly. It blooms for six or seven months without ceasing. Anyone having plants of it, by now keeping them in a temperature of 60° in the night, may have it flowering up to the end of November. Young examples of any of the other kinds, struck from cuttings last autumn, provided they have been kept going freely, will do well if at once moved on into 12-inch or 13-inch pots, that is, if a fair amount of heat can be kept up through the winter, say a night temperature of 65°, for nothing is gained by resting young specimens of these *Dipladenias*, but a loss of time in their flowering much later next season. *D. crassinode*, one of the best for cut flowers, should not be lost sight of, for if pushed on during the winter it will bloom continuously from the beginning of May up till late

in autumn. For a reasonable chance of success with these plants suitable soil in the shape of the best fibrous peat, with much of the earthy matter shaken out, should be available. Use it in a lumpy condition, with a liberal addition of sand.

GARDENIAS.—The stock should now be looked over, and such as have their bloom-buds prominent, or partially developed, ought to be placed where they can be kept not lower than 60° in the night, with less moisture in the atmosphere than it was necessary to have in the bright summer season. If the pots are full of roots sprinkle a little of some or other of the concentrated manures on the surface of the ball once every three weeks or so; a little at a time in this way will be much better and safer than heavy dressings seldom. The fertilising elements will reach the roots with the water given to the soil; it must not, however, be applied so often as when there was more sun to dry it up, otherwise the flower-buds will be liable to fall off without opening. Successional plants intended to bloom later may be kept somewhat cooler, but must not be subjected to too low a temperature, otherwise the bloom-buds that should now be set will not come forward when submitted to more warmth. The dwarf-growing *G. citriodora* is a profuse flowerer, blooming freely in moderate heat, and deserves to be much more generally cultivated than it is; the flowers when mounted are useful for bouquets, wreaths, or in any other way that Orange blossom can be employed, for which they answer well as a substitute.

TUBEROSES.—Where these are well managed, and sufficient quantities are grown, they can be had in flower over a considerable portion of the year. Those that are pushing up their bloom-stems should be kept with their heads close to the glass; heat ought to be given them proportionate to the need there is of pushing them on into flower, or the reverse if their blooming is to be retarded. If it is necessary to push them on they will bear a night temperature of 60°, or they may be kept at 50°; but if too cold, the blooming will not be satisfactory. The same applies to plants that have made considerable root and leaf growth, and are only now about pushing up their flower-stems; if checked by too low a temperature at this season, the chances are that many will fail to bloom altogether. Give water sufficiently often to keep the soil in a moderately moist, healthy condition, but not too wet.

SALVIAS.—The earliest flowering plants of these will now be in bloom, and if sufficiently supplied with manure water, will, after the leading terminal shoots have flowered, produce laterals freely that will bloom later on. Want of room at this season, when almost everything has to be got under glass, frequently is the cause of many things of this character being stood much closer together than is conducive to their well-being, the result of which is that the bottom leaves suffer, not only giving the plants an unsightly appearance, but reducing their flowering capabilities. This is particularly the case with the later-blooming kinds. The lighter the houses or pits in which they are located, or, these failing, the higher the plants are raised up to the roof the closer these and all other subjects that develop their flowers through the short winter days will bear standing together. Amongst the less well-known varieties, *S. Bethellii* (pink) and *S. Pitcheri* (blue) are particularly deserving of general cultivation; their distinct character in habit of growth and profuse flowering disposition, even in a small state, commend them to all who are in any way pinched for glass accommodation.

BERRY-BEARING SOLANUMS.—Plants that were lifted and potted a short time back, as advised, will have begun to root freely in the soil, as when properly treated they push their fibres rapidly. They should now be accommodated with a good, light, airy pit or house. Such as have their berries sufficiently coloured may be at once placed in the conservatory or greenhouse, where, associated with flowering and fine-leaved plants, they will be effective for several months. These plants are subject to green fly, and before being taken in, if

ever so little affected by it, should be fumigated two or three times in succession. Later stock, the berries of which are yet green, ought to be kept in an ordinary greenhouse temperature, where the fruit will colour slowly, coming to their best about the end of the year, at which time they will be found very useful. One of the advantages of growing a sufficient quantity of these plants is that they bear keeping in rooms, halls, or similar places where the light is insufficient for most things and the atmosphere not such as plants of a more tender nature require.

PRIMULAS.—It is time now to get both the single and double varieties of these out of frames, and to place them in their winter quarters, which should be in a house or pit where they will receive plenty of light and the atmosphere is drier than most soft-wooded plants need. The double varieties especially will be benefited by a little warmth continuously; where this can be given them all on from the present time to the return of warmer weather in spring, they keep on growing and blooming simultaneously, the flowers under such conditions being much larger and more abundant than where subjected to an ordinary greenhouse temperature. Weak manure water once a fortnight will assist both the double and single kinds materially, both as regards the size and colour of the flowers and the stronger condition and more healthy hue of the foliage.

CINERARIAS.—Plants of these raised from the earliest sown seed will, if they have been managed right, be now about pushing up their flower-stems. Much of their ultimate blooming depends on the treatment they now receive; the more liberally they are supplied with weak manure water, the stronger they will flower. They will be benefited by having it every time they require water, not giving it too strong. Keep the plants so far as possible standing on a moist bottom, such as damp ashes or sand, without a current of dry air admitted to the side.

FLOWER GARDEN.

GENERAL WORK.—At present, beyond the maintenance of neatness, there is no department that demands special attention. Advantage should, therefore, be taken of the opportunity to commence operations on any extensive alterations or improvements that are intended to be done during the coming winter, an early start being desirable, first, because of the uncertainty of the winter, or rather of the weather, at that season, and secondly, because the transplanting of most kinds of trees is most successful when performed in autumn and early winter, for the very obvious reason that they have then time to get established in their new quarters before there is any danger of drying winds and powerful sunshine checking free root action. Rhododendrons, Azaleas, and Conifers are the first on our list for transplantation, which will be done the moment the positions for them are prepared by deep trenching and manuring. The character of the soil here—a sandy loam—being suited to the plants named, no further preparation is needed to ensure success, but those less favoured either as to soil or position must work accordingly. Drainage, deep tilth, and a loam free from chalk and not too adhesive will grow American plants almost equally well as peat, whilst some kinds of Conifers really do best in a chalky soil. In the flower garden, as the plants die off or begin to look weedy let them be at once removed and their places filled with others for the winter. All the dark-foliaged tender plants we are now pulling up, and in their places are planting *Ericas*, small shrubs, and *Ajugas*, and in some instances laying down plots of *Sedum* that have been grown in a reserve garden for the purpose, and which, being moved with a spade and with soil adhering to them, never feel the removal, and are at once effective. The principle is also applicable to choice plants that it is desired to save from injury by frost. Let these be removed now, and fill in with the most suitable plants at command. Keep the edgings of the beds neatly trimmed, and bad flowers and foliage daily removed; by these means should sharp frost not intervene, a credit-

able display of flowers may be had till quite the end of the month. At this moment tuberous *Begonias* are simply magnificent, and have been so during the entire season; next year they will be used much more largely. We have them planted a good distance apart on a groundwork of *Sedum* acre and *Sedum glaucum*, and each plant standing thus separately has a far better effect than others planted in a mass, not to mention the economising as regards plants that this manner of planting ensures. As soon as frost blackens them the bulbs will be lifted and placed thickly in boxes of sand, and wintered in a shed that is cool, but secure from frost. It is not now safe to leave unprotected at night any kinds of bedding plants; therefore all that have been struck in the open borders should either be potted up at once, or, till this can be done, be covered up nightly. *Calceolaria* cuttings should now be got in. A frame is best for striking them in, and the soil should be two-thirds light loam and the other third leaf soil. The cuttings, which should be 2½ in. apart, should be well fastened in the soil and for the first fortnight shaded from sunshine. Pansies and *Violas* should be treated in exactly the same way, and these, too, should be got in as early as circumstances permit.

FRUIT.

PINES.—As the days decrease in length the temperature in every department may be reduced by degrees until the minimum is reached and plants in various stages of growth are brought into what is termed the resting period, when the supply of water and atmospheric moisture must be reduced to meet their diminished requirements. It is not, however, wise to withhold heat and moisture to an extent that will produce a check, as there is no standing still in Nature, and succession Pine plants which go away best in the spring and give the most satisfactory results are invariably selected from stocks which have been kept steadily progressing through the winter months. If any alterations still have to be made no time must be lost, particularly where the renovation of the beds necessitates exposure of the plants to the elements. In such places where the only means of access is by the opening of the roof lights and underground pipes are not abundant, good tanner's bark forms the best plunging material for the winter months, as it retains its heat much longer than leaves; but the latter, if well harvested from the Oak or Beech, form a more genial medium for summer use, as the constant decay of vegetable matter by fermentation produces elements highly acceptable to nearly all tropical plants, and notably to the Pine through every stage of its growth. Where composition of any kind has been applied to the glass for shading purposes every particle still adhering must now be removed to give the plants the benefit of sun heat and light, and blinds on rollers may be taken down and stored away for the winter. Keep the successions free from suckers by screwing them out until they show fruit and then allow one on each plant to grow. Old stools of scarce or shy kinds may be divested of all their leaves after the fruit is cut and placed on their sides in shallow boxes as close as they will lie together. The boxes may then be filled up with leaf-mould or peat and plunged in a strong bottom-heat for the winter. But little, if any, water will be needed until the buds break and begin to push through the surface, when slight sprinklings at syringing time will soon cause them to emit roots and assume the form of seedling plants fit for potting off singly. It is a very common practice to place autumn-struck suckers close together at a time when space is limited. There they often become drawn before the mistake is discovered, and as no after-management can correct this evil, it will be well to resist the temptation to retain a greater number than can be properly accommodated, and then they must be plunged well up to the glass to keep them in a sturdy condition. If a good supply of turf has not been secured for potting purposes, this is perhaps the best time in the whole year for getting it home, as the roots of the herbage are sound and

firm and form a more durable fibre than when taken off earlier in the season. A dry day should always be selected for cutting and storing, and the turves should be taken off thin and rolled up as for relaying on a lawn in preference to stacking large flat pieces in a solid mass quite impermeable to the pulverising influence of the atmosphere.

VINES—Late houses that were started early and helped forward with fire-heat will now be finishing crops of ripe, well-coloured fruit, which may be expected to hang and winter better than Grapes that still require fire-heat, and the wood and foliage being well ripened, all lateral growths may be shortened back to prevent crowding, and those which emanate from the base of the buds on old Vines should be cut away to plump them up before the foliage falls. As days and nights get colder gradually reduce the temperature to a minimum of 50°, with a rise of say 10° on fine days, and ventilate freely to secure a circulation of air when external conditions are favourable, but keep the ground ventilators closed when the weather is wet and the atmosphere is heavily charged with moisture. The above remarks apply to black Grapes; but Muscats, where quite ripe, will keep well under similar treatment. Houses in which Hamburgs and other thin-skinned kinds are hanging must be kept dry and cool, not by throwing all the ventilators open every day, but by keeping them closed in wet weather, and by dispensing with fire-heat as much as possible consistent with the maintenance of a temperature which does not strike cold to the body when the house is entered. Look over the bunches at least twice a week, and remove every faulty berry before it has time to taint its neighbour. Discontinue all sweeping and raking, as dust soon disfigures the fruit, and draw a tarpaulin over the external borders from this time until all the Grapes are cut. If former directions have been attended to all the necessary preliminaries will have been completed in the early house, and the vines will be ready for starting. If fermenting material is used for external borders it should not be applied until the buds are on the move, but some slight covering may be placed over the roots to protect them from cold, chilling rains. The second early house will now be better for having the portable lights—as a matter of course, recently mended and painted—replaced on the roof when pruning, and the usual routine of scrubbing and cleansing must follow. Many people do not think it necessary to expose their Vines or Peaches to the weather, but we have always felt better satisfied with the start and finish after they have had the benefit of fine autumnal rains which so thoroughly cleanse the foliage and buds, and enrich and sweeten internal borders after they have been slushed with stimulating liquid and shut out from the influence of the atmosphere for at least six months out of the twelve. If yearling or maiden Vines are still growing and do not show a disposition to ripen up properly, this process may be greatly facilitated by maintaining a strong dry heat, with air through the day, and by shutting off the fire and keeping the house cool at night. Get fruiting pot Vines pruned, top-dressed, and placed in position ready for starting.

ORCHARD HOUSES.—With the exception of a few late Plums, Pears, and clingstone Peaches, the orchard house season is over, and the present month will be devoted to the correction of drainage, potting on, reducing, or top-dressing, and as next year's success depends upon the way in which these matters are carried out, it may not be amiss to again direct attention to the importance of using clean dry pots and drainage, dry sound loam of a calcareous nature with a liberal admixture of crushed bones, charred refuse, or old lime rubble. These should be thoroughly incorporated and kept under cover for some time before being used, and as firm potting is imperative, the shift should always be large enough to admit of the use of a fair sized potting stick for ramming the compost as the work proceeds. Another important point which must not be overlooked is the watering or soaking of the balls of the trees

before they are turned out, otherwise it matters little how well every part of the work may be performed. Neglect of this will lead to disappointment and failure. When all the trees have been overhauled, select a dry, airy, but sheltered situation in the open air, place each tree upon two bricks, and leave the pots exposed to the influence of sun and air for a time. On the approach of bad weather fill in between the pots with dry Fern leaves or Cocoa-nut fibre to protect the tender roots, which soon begin to work through to the sides of the pots, from frost, and to prevent the latter from being burst or cracked by expansion of the soil. It is hardly necessary to say all pruning should be performed as soon as the fruit is gathered, and the protection of the buds from birds by means of fishing nets must not be neglected. If trees for potting up have not been selected, lose no time in getting them marked before the leaves fall. Always give the preference to clean healthy trees of moderate growth, as they are generally well furnished with fibrous roots, and the wood being ripe they always lift well.

ORCHIDS.

EAST INDIA HOUSE.—The plants in this house should now be as much exposed to the sun as possible, and where the house is span-roofed with the end to the south, shading will not be much required, and should only be used during warm bright weather for an hour or two at mid-day. Particular attention should be given to watering, which ought to be applied with a syringe, taking care that none of it goes on the leaves. It is best to water in the early part of the day with water that has been standing in pots all night near the hot-water pipes. *Saccolabiums* and *Phalænopsis* should be surface-dressed if they require it. These and similar species have so far been freely supplied with water, and the Sphagnum has grown up in some cases so much as to cover the centre of the *Phalænopsis*; this ought to be removed, replacing it with some fresh Sphagnum which has been well washed in clean water before using it. It will not grow much after this time, as in the course of a month it must be allowed to become rather dry before watering it. In surface-dressing all decaying matter ought to be removed. *Aerides nobile*, a good form of *suavissimum*, is now in flower. It is not only a useful species for flowering late, but also exceedingly handsome. We have *Cattleya superba* in flower now, and very beautiful it is, and distinct in colour from that of most other *Cattleyas*; few, too, require less attention. It should be tied to stumps of Tree Ferns about 1 foot long, when it will annually make good flowering growths if kept near the glass in the warmest house. *Dendrobium formosum*, not yet out of bloom, ought to be grown in baskets and suspended near the roof. Many of the *Cypripediums* also flower at this season. We have a large specimen of *C. Stonei* throwing up three good spikes, and the flowers are just open. *C. Harrisonianum* also flowers at this season, and the pretty singular-looking *C. Domini* is not yet over, while chance blooms may still be found of the pretty *C. niveum*. All these may be looked over, and if any of them would be improved by a little fresh material being added to the surface it may be done. The temperature of this house need not exceed 70° at night. Our house falls in cold nights to 65°, but we do not care to have it lower than this until the season is further advanced, when it may fall between 65° and 60°, but not lower. Trap slugs, snails, and woodlice; watch for them at night to prevent them eating any flower-spikes coming up, or the succulent roots of *Saccolabiums*, &c. The eaten roots sometimes rot and do much injury. We have not yet got rid of thrips, but the instant they appear the plant infested with them is either washed with a sponge or dipped entirely in a solution of Tobacco and soap. The yellow aphid is also troublesome to destroy; the instant a plant is touched, one of their number acts apparently as leader, and the whole of them troop after it down the stem and hide in the Sphagnum at its base, from which they re-ascend at their leisure.

CATTELEYA HOUSE.—If *Odontoglossum Phalænopsis* has been kept in the cool house until now, it should be removed to this house and placed in a position quite near to the glass; a good plan is to place the pots containing the plants in teak baskets and hang them up to the rafters. Our plants have been placed on shelves, where they have succeeded much better than they did when further removed from the glass on the stage along with *Cattleyas*. *Odontoglossum vexillarium* requires much the same treatment. We removed our plants from the cool house the week before last and placed them near the glass; before doing so, the surface of the compost was made fresh by the addition of living Sphagnum and good fibrous peat. Where the Sphagnum grows so luxuriantly as to cover the pseudo-bulbs, we sometimes press it down with the fingers and at others remove it, supplying its place with that which has been freshly gathered. *Oncidium crispum* and *O. varicosum* are now throwing up their flower-spikes; the tender growths of the former when about 2 inches or 3 inches in length are frequently eaten over; and they can only be saved by watching at night with lamp-light for the depredators. Both of these species seem to succeed best if planted in upright baskets, or rather cylinders of teak. We have grown them successfully in this way with a length of Tree Fern split into quarters and placed in the interior of the basket. The roots run into and take firm hold of the Tree Fern, the loose nature of which retains water, but not in sufficient quantity to injure the roots. *Oncidium Marshallianum* may soon be showing the points of the flower-spikes from the base of the pseudo-bulbs, and ought to be looked over every night. The very showy *Odontoglossum grande* makes a beautiful display at this season in the *Cattleya* house. Some grow these in the cool house, but there we have found the bulbs had a tendency to rot when their growth was nearly completed. This they do not in the drier and warmer atmosphere of the *Cattleya* house.

COOL HOUSE.—*Masdevallias*, &c., should now be potted without delay, and surface dressed if required. All flower-spikes coming up, too, must be preserved from depredators. The earliest spikes of *Oncidium macranthum* will now be showing, and should also be carefully guarded, but they will not reach the flowering stage until June. *Odontoglossum bicktonense* is a distinct and useful species, and one which does well in the coolest house. It is now in flower, and lasts in beauty a long time. *Lælia autumnalis*, a good cool house species, is now showing its flower-spikes; the best varieties of this *Lælia* are truly valuable plants and form quite a distinct feature well worth attention in the cool house.

PROPAGATING.

ALL tender plants intended for stock or further use next season should be by this time secure from frost. *Echeverias* and other tender succulents will be found on being lifted to have formed a number of offsets around the collar, which may be taken off and dibbled in well-drained boxes of sandy soil, and placed on a dry shelf, where they will root, and by bedding-out time, though small, will be large enough for many purposes. At the same time, any that are found to be too tall may be at once cut down; the tops should be put in comparatively small pots, and if kept free from damp during the winter will be rooted and ready for use in spring. One of the last plants propagated is generally the *Calceolaria*; for this a cold frame is best, as it dislikes heat; in fact, an error is often committed by giving cuttings of all kinds too high a temperature; a few degrees higher than that in which they have been—80°—is of assistance, but if much exceeded the chances of success are reduced. The better plan where it can be carried out is to keep the plants for a week or so before taking the cuttings in the same temperature as the propagating house; of course, where planted out such cannot be done, but in the case of new or choice plants where the success of every cutting is a consideration such a practice should always be followed. Greenhouse *Rhododendrons* of the Princess Royal section strike readily from

cuttings, and grow away as freely as those that are grafted. Take the cuttings in summer when the growth is moderately firm, *i.e.*, half ripened, and as the new growth consists of a length of naked stem with a cluster of leaves at the top, it should be cut down close to the leaves of the preceding growth, and at the base of the cutting will be found two or three dormant buds, which, if retained, assist the formation of roots. Thumb pots, in which each cutting is inserted singly, are the best; they may be filled one-third with broken crocks or charcoal, and the remainder with fine sandy peat, space being left for a layer of sand on the top. Care must be taken to press the soil firmly down, and when the cutting is inserted, there must be no cavity left round its base. After being watered the pots and their contents should be placed in a close case, kept at an intermediate temperature, shading, watering, &c., as in the case of other cuttings, and they will be well rooted in about two months, when they may be gradually hardened off. When confined in close cases a sharp eye must be kept for their great enemy, thrips, which, if once allowed to effect a lodgment, soon disfigure the plants. On examination a few will be found to have emitted no roots, although there is a large irregular callus; in that case one of the best incentives to root formation is to take them out of the pots, cut off a few protuberances from the callus, and re-insert as before in fresh soil; so treated, roots will in most cases speedily push from the fresh surface. This principle may be followed out in the case of most subjects that root tardily. Another method by which we have been successful with subjects difficult to root is, after taking them out of the pots, to put them in the Cocoa-nut fibre forming the bottom of the case; but if this be followed increased watching will be necessary; the fibre assists the formation of roots, but they speedily decay in it if not potted off.

Fruits, such as those of Roses, Hawthorns, &c., should as soon as gathered be mixed with sand and placed in a heap outside, commonly known as the rot heap; in this not only does all the fleshy matter rot off, but the seed is kept moist all the winter, and when sown in the spring soon germinates; whereas, if kept in a dry state till sown its germination is much more irregular, and it will be found that many will lie dormant the following spring.

KITCHEN GARDEN.

GET all late Potatoes lifted as soon as possible; if they could be put into sheds, properly sorted, before finally clamping them for the winter, all the better; if not, put them into clamps at once; 3½ feet wide will be sufficient. Give them first a good covering of straw, and then another of earth; but that most objectionable plan of leaving chimneys must be avoided. They only let in the wet, and do harm instead of good. Make another sowing of Spinach; keep well cultivated early spring Cabbage and Lettuce quarters; hoeing one row and treading in the other leaves the whole piece smart and trim. French Beans must be earthed and rodded as they make progress and another batch sown. Endive may now be lifted, laid in under shelter, and have charcoal slightly sprinkled among it to keep it from rotting; when nicely blanched it makes a very pretty and fairly good salad, and as a change desirable. Mustard and Cress must also be sown in small boxes, and a regular supply kept up. Get late Celery well earthed up, and any Broccoli or Walcheren Cauliflower not wanted may be lifted and shedded. It keeps well tied up by the heels in a dry shed or laid in among soil, covering up the roots.

Autumn sown annuals.—If not already done, now is the best time to sow seeds of many showy annual plants for next year's blooming. Sweet Peas sown now pass through ordinary winters unscathed, and flower both earlier and finer than if sown in spring. This is true of *Collinsia*, *Clarkia*, *Bartonia*, *Limnanthes*, indeed of many others of what are known as hardy annuals. *Saponaria* and *Silene* sown now make lovely masses

of rose-pink in the spring months; so also of the Poppies, especially *Papaver umbrosum*, which becomes far finer when sown now, and the same is true of *Nemophila* and blue Cornflower. In sowing our annuals in autumn we follow Nature's own plan, and have, moreover, a double chance of success, since a second sowing time yet remains to us in spring, as usual, in case of failure.—F. W. B.

GATHERING SEED.

ALL seeds which can possibly be secured should be under cover before many days are over. As a rule, we find our finest seeds to be those harvested in July and August; October-saved ones are seldom of such high quality. I am speaking now of such seeds as Peas and Beans (Broad and Kidney). In private gardens it would never pay for anyone to attempt to save all their own seeds, as they can be bought more cheaply, and, as a rule, of better quality—an important point; but there are many little odds and ends in the way of choice varieties of flowers and vegetables in the saving of which many take an interest. Sometimes when we have met with an extra good Onion or Tomato we have put it aside for seed, and we have done the same with Stocks and Asters, *Celosias*, *Zinnias*, and similar material, and by carefully selecting the best year after year, much good has been the result. Seed from plants of inferior growth, either of flowers or fruit, should never be saved, as in that case the stock would degenerate, but improvements in all shapes and forms should be marked and preserved. Seed-bearing plants cannot be grown too much in the sun. This is of the utmost importance, as full development and maturation should be encouraged. About the time seed is ripening it should be looked over almost daily, and harvesting should begin before the pods open. In July and August seed ripens very fast, and there is no trouble in drying it, but now it needs more attention. One of the best places in which to dry any kind of seed at the present time is a viney from which the Grapes have been cut and where there is a free circulation of air. If laid out on boards or mats or hung up on the Vine wires everything will be satisfactory. Empty frames with the lights drawn over them are also good places in which to dry seeds, and open airy sheds answer the purpose very well, but nothing can be done now in the way of open-air drying. All seeds should be cut when quite dry, and no attempt should be made to work with them in the open when they are in any way damp. When rain falls day after day and seeds nearly ripe are in danger of decaying, it is best to allow some to do so, and trust to having fine weather to secure the remainder, as seeds harvested under such circumstances are never satisfactory.

CAMBRIAN.

MESSRS. WHEELER & SON'S NURSERY.

THROUGHOUT the west of England there is no older or better known nursery and seed firm than that of Messrs. Wheeler. Its history goes as far back as 1763. In that year Mr. James Wheeler, then eminent as a seedsman, published the "Botanists' and Gardeners' New Dictionary," a book of 480 pages, showing much ability and research. Mr. James Wheeler, who died in 1807 at the advanced age of ninety-four, was succeeded by his sons, Edward and William, who, dying comparatively early, were again succeeded by William's son, James Cheslin Wheeler, a well-known man in his day, and the immediate predecessor of the present proprietor, a great-grandson of the original James Wheeler, the founder of the firm. In what are termed the "good old times," when the postage of a letter from Gloucester to London was nine-pence, and when the conveyance of trees and seeds had to be done by stage waggons, the sending of 30,000 Larches from Gloucester to Abercromby was a serious undertaking, necessitating the engagement of neighbouring farmers' horses, waggons, and carters for the greater part of a week. The trade then done was, comparatively speaking, limited to the locality, but now, with our railway facilities and cheap postage, the trade of the firm

has so largely developed, that there are few counties in which seeds from Gloucester are not known and appreciated. Horticulturists will always look with respect to such establishments as that of Messrs. Wheeler. Of outward show there is little, but the interior is substantial. Passers-by would take the seed shop to be a provincial branch of the Bank of England, and the Kingsholm Nurseries do not proclaim their existence loudly outside, but an inspection inside reveals a wonderful wealth of high class nursery material, especially in the way of fruit trees. "Do you grow for the trade?" I asked, and the reply was, "Very little indeed; the retail demands being great," a statement at which I am not surprised, as of all stocks of young fruit trees I have ever seen, none are superior to the thousands upon thousands which I saw here. Gloucestershire is noted for its orchards and Apples, and I would add, for its young fruit trees. The situation of the nursery is all that could be desired; the soil is substantial and firm—just the sort in which all kinds of fruit trees would be induced to make multitudes of close-growing, fibrous roots, which in the case of young trees are so essential for successful planting. Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, and fruit trees generally are grown here in all forms, such, for instance, as in that of pyramids, fan, and horizontal trained, cordons, bushes without training, and tall-stemmed standards for orchards. Over 300 varieties of Apples and Pears are to be found here; but extensive as the great batches of each sort are, they are evidently not too numerous for the demand, not a tree in the nursery being over three years old. The Paradise is the favourite stock for early fruiting and dwarf trees, and the Crab for taller ones. Many of the small two-year old trees were bearing fine crops of fruit, and amongst the Apples I noted a few which, I was assured, never failed to produce crops. These were Cox's Orange Pippin, Golden Noble, Hawthornden, Dumelow's Seedling, Pearson's Plate, Emperor Alexander, Waltham Abbey, Kerry Pippin, Yellow Ingestre, Cellini, Lord Suffield, and that well-known sort, Ashmead's Kernel. It would be impossible to imagine anything finer than the crops which these little trees were bearing. The fruit, too, was of the finest description. Amongst Pears, Brockworth Park, a variety for which we are indebted to Messrs. Wheeler, was very conspicuous in choice fine specimens. It is a free grower and an enormous bearer of finely coloured, beautifully flavoured fruits, which ripen in October and November. It is a Gloucestershire Pear and should be in every garden. Many of the bush Peach, Nectarine, and Apricot trees were plunged in pots for orchard house work, and the fine clean growths which they were forming, or rather had formed, as they were ripening the wood when I saw them, was astonishing; in fact, without exception, all the fruit trees were in excellent condition. It is always encouraging when fruit can be had the first year after planting, and this is our experience in the case of Messrs. Wheeler's trees, a department to which much attention is devoted.

ROSES are another of the specialties for which this nursery is celebrated, and as these always do well where fruit trees excel, I will be saying nothing unexpected when I state that the Roses are most satisfactory this season, drought notwithstanding. Many of them are grafted on the seedling Brier and Brier stocks raised from cuttings, and in both cases have produced luxuriant shoots of the most promising kind. Forest trees are extensively grown here, and so are both the common and rarest shrubs and all the best of the Conifers. Trees and shrubs of all classes are represented by fine healthy little specimens which are given plenty of room in which to develop themselves. Hardy plants are also well and extensively cultivated. The white Hyacinthus candicans had spikes 6 feet high, and was very effective in a shrub border. Dahlia Glare of the Garden was a very bright and attractive variety. Ivies in the shape of numerous choice varieties are grown in large patches, and may be included amongst the finest of hardy fine-foliaged plants. Up-

wards of 2000 Clematises were plunged in sunny quarters, where in 5-inch and 6-inch pots they had developed into good plants. The crowns of Christmas Roses were well developed and finely furnished with healthy foliage. *Richardia albo-maculata*, with its handsome white spotted leaves, as seen here was a plant which should be extensively grown in the summer flower garden. Phloxes were numerous and showy, and, strange to say, Hollyhocks were growing luxuriantly in this nursery. Pinks, Carnations, and all kinds of border flowers worth cultivating were likewise here in quantity. Some ornamental pathways which traverse the nursery were bordered on each side with specimen trees, shrubs, and hardy flowers. In some frames here we saw a fine lot of Duke of Cornwall Cucumber, the seed of which was just ripening. It is a prolific and handsome white-spined sort, superior we thought to Messrs. Wheeler's other noted variety, viz., *Empress of India*.

THE GLASS DEPARTMENT of this nursery is more in the town than the large fields of nursery stock just noticed. It consists of numbers of both large and small houses well adapted for plants. Two houses are filled with Orchids, one being devoted to cool varieties, and both very healthy and clean in growth. Azaleas of various sizes and in great variety are grown here—robust plants well covered with flower-buds. Gloxinias are largely grown in this nursery, both erect and other flowering kinds, and some raised from seed this spring were bearing many handsome flowers. Primulas, Cinerarias, and Calceolarias are also extra fine here, hybridising and selecting with a view to improvement being never lost sight of. A general nursery stock also exists in these houses, all being in creditable condition. Special mention must be made of pot Vines, which are as fine as anyone could desire, either for permanent planting with the view of filling a new viney or recruiting an old one, or for early and heavy crops. The canes are uncommonly thick, very short-jointed, and maturing to perfection.

IN THE TRIAL GROUNDS at Tuffley we found a capital soil for the proper development of flowers and seeds, and the innumerable kinds of annuals and other flowers growing here were in first-rate condition. The ground is divided into long strips of cultivated soil with closely-cut Grass pathways intervening, and the large rich masses of gay colours thus set in green are extremely effective. Here Wheeler's strains of giant Ten-week Stocks grow most robustly and emit great spikes of finely coloured flowers. Single Dahlias were also here in great numbers, named and from seed. Many were very poor, some very good, and not a few first-rate, both in habit of growth and colour. Sweet Williams, Canterbury Bells, single and double Pyrethrums, bedding Pansies, Antirrhinums, Aquilegias, and other old favourite perennials, for which there is now an increasing demand, were especially fine. Of Asters and Tropæolums I noticed some grand examples, and seedling Carnations were growing and blooming in huge masses, and in every way excellent. Those who find choice named Carnations difficult to grow should try seedlings. The latter are not only hardier, but more floriferous.

MANY VEGETABLES, such as Peas, Lettuces, Leeks, Onions, &c., are also being tried here. The Gloucester Kidney Potato, a favourite sort and a speciality with this firm, was producing a capital crop of fine tubers, and the Double Gloucester, named after the noted cheese of that county, exhibited many points of unusual merit. The tubers are as white and well formed as those of International, but not so large, being of a better table size and entirely free from the watery inferior quality which belongs to the International. As it grows robustly, bears freely, and is said to be disease-resisting, this new variety is certain soon to find favour with the public. Agricultural seeds in which the Messrs. Wheeler deal largely, are on trial here too; indeed, everything is thoroughly tested before it is submitted to the public.

J. MUIR.

Margam, Tuibach, Glamorganshire.

GARDEN DESTROYERS.

THE CLEARWING MOTHS.

(SESIDÆ)

THIS curious, but very beautiful group of small moths cannot, I am afraid, be considered harmless in gardens, though the amount of damage they cause is very slight in comparison with that which many other insects commit. Most persons on first seeing one of these moths would take it for a hornet, wasp, fly, or some other insect with transparent wings, and would not for a moment imagine it was a moth, for their wings, as their common name implies, are nearly entirely free from the scales with which the wings of most butterflies and moths are so thickly covered on both sides.



Fig. 1.—Caterpillar of the Currant clearwing (*Sesia tipuliformis*).

Their resemblance to various other insects is so great, that it is recorded in their scientific names—viz., the hornet clearwing (*Trochilium apiformis*), *Sesia tipuliformis*, *S. culiciformis*. The caterpillars of these moths live in the stems, branches, or roots of trees, shrubs and other plants. The species which does most harm in gardens is the Currant clearwing (*Sesia tipuliformis*). The caterpillars of this species bore into the stems and branches of Currant bushes and feed on the pith; this causes the branch to wither and die. It may be frequently noticed that although a Currant bush looks per-



Fig. 2.—The hornet clearwing (*Sesia apiformis*).

fectly healthy, one or more of its branches will wither in a very unaccountable manner; when this is the case the caterpillars of the Currant clearwing are generally the culprits. The only thing, then, to be done is to cut off the branch, split it open, and destroy the caterpillar. Red, White, and Black Currants are all alike liable to be attacked. This insect is by no means rare, and is probably more common than it is generally supposed to be, as it is inconspicuous in size and colour, and is so easily mistaken for other insects; the caterpillars also, hidden as they are in the stems or branches, are seldom seen. The moths may be found during May and June flying about the Currant bushes and various flowers during the day. They lay their eggs in some crack or crevice in the bark of a young shoot; the newly hatched caterpillars eat their way into

the centre of the shoot, and work down gradually towards the stem. They continue feeding on the pith during the winter, and then become chrysalides within their burrow. The chrysalis is provided, at the edge of each segment of its body, with a row of recurved spurs, by means of which it is able to work itself partly out of the hole in the stem previously made by the caterpillar when the time comes for the moth to emerge.

THIS MOTH is about three-quarters of an inch across the wings when they are fully expanded, and is hardly half-an-inch in length. The head, thorax, and body are bluish black; the thorax has two yellow longitudinal lines, one on either side, and the body of the female has three, and the male four pale yellow transverse bands; in both sexes it is long, slender, and terminated by a brush or fan of hairs, which the insect can open or close at pleasure. The antennæ are bluish black, long, and somewhat club-shaped. The wings are narrow and transparent, with the exception of the margins and a transverse band near the end of the wings; these are thickly clothed with bluish black scales. The nervures are of the same colour, and the hind margins are golden yellow; in the lower pair the veins are bluish black. The caterpillar (fig. 1) is nearly three-quarters of an inch in length, cylindrical, and white in colour, with the exception of the head and markings on the first segment of the body, which are dark. The first three, the sixth, seventh, eighth, ninth, and last joints of the body each bear a pair of legs. The caterpillars of another species, *Sesia myopæformis*, is injurious to Apple and Pear trees, but fortunately, like the foregoing species, it is never very abundant, and it has not hitherto been convicted of doing much damage, which it certainly would have been if it was very common, for it lives two years, making long galleries in the soft wood under the bark of Apple and Pear trees.

THE MOTH of this species measures not quite three-quarters of an inch in length and about an inch across the wings when fully opened. The head, thorax, and body are bluish black, the sides of the thorax in front are yellowish, the fourth segment of the body is red. The margins of the front wings are bluish black, as well as a short band across the wings. The caterpillar forms its cocoon in the bark. The caterpillars of the hornet clearwing (*Trochilium apiformis*) live in the lower parts of the stems and roots of Poplars. The moth (fig. 2) is very sluggish during the daytime, and may be found on the lower parts of the stems of the trees. It much resembles a hornet in size and colour, and measures fully three-quarters of an inch in length, and an inch and a half across the open wings. Its general colour is dark brown, but the head has two spots on the front of the thorax. The joint of the first two and the three apical joints of the body are yellow; the margin of the upper wings are reddish yellow, the hind margins being darkest. The caterpillars are yellowish white, with a darker stripe down the middle of their backs. *Trochilium bembiciforme* is very much like the last species, but besides other characters the body is more yellow. The caterpillars perforate the young branches of Sal- lows, causing much injury to the trees. There are thirteen species of these clearwing moths indigenous to this country; the caterpillars of ten live in the stems, branches, or roots of various trees and bushes, those of the other three may be found in the roots of herbaceous plants. One or two species besides those already described are reported to attack fruit trees, as well as those timber trees in which they are usually found. G. S. S.

Sedum Sieboldi a bee flower.—One of the most striking objects amongst autumn flowers has been a large mass of this rosy-flowered *Sedum*, the huge heads of which when fully expanded form one dense mass of bloom, of which bees and most kinds of winged insects seem unusually fond. I should think, therefore, that owners of gardens who go in for bee-keeping might with advantage plant this *Sedum* in quantity in close proximity to their hives. Honey-supplying flowers are at this date getting limited, and I may remark

for the benefit of those who have not tried this useful plant that it will grow freely in the driest and poorest soil. I have some growing amongst rockwork in which the soil is very limited; nevertheless, even during the late long protracted drought, when other plants could scarcely be kept alive, great clumps of this *Sedum* seemed to enjoy the heat, the heads of bloom being finer and higher coloured this season than usual. There is no difficulty whatever in its cultivation; small pieces of it put in at this date develop into large clumps by next year, and in no way does it show itself to such advantage as in single isolated clumps. In mixed borders it is useful for filling up the spaces between the earlier flowering Lilies, Larkspurs, Phloxes, and other herbaceous plants, to which it affords a good succession.—JAMES GROOM, *Gosport*.

MARKET GARDEN NOTES.

Turnips.—These are being rapidly pushed into market, and owing to the late copious rains are now in good condition. A large grower near here is sending weekly seven loads into the Borough Market, each one containing seventy dozen bunches. Formerly all kinds of vegetables grown in this district, which is about twenty miles south of London, were hauled into market by road, and many growers still pursue this plan, but some of the larger ones are finding that the wear and tear of horses and tackle is more expensive in the long run than sending by rail, and therefore they put their carts or waggons, as the case may be, bodily on the rail, making arrangements for having them drawn into market when they arrive at the terminus. Whatever truth there may be in the assertion so frequently made that the culture of vegetables for market is a precarious and by no means profitable affair, it is certain that it is not on the decline, but quite the contrary, as is evidenced by the ever-increasing pressure on our large metropolitan markets. Goods are now sent by rail in the manner mentioned above from localities too far removed from London to allow of their being hauled by road, and in some instances traction engines are employed for the same purpose. Three times a week all through the autumn and winter a traction engine brings three or four truckloads of vegetables from Essex into the Borough Market, the goods coming all or nearly all from one man. The fact seems to be that the depressed state of agriculture has had the effect of increasing the area of land under vegetables to a considerable extent, and many of the shrewdest of the newer generation of farmers who are not too far removed from London and other large industrial centres are discovering that their interests will be best served by combining ordinary farm crops with those which have hitherto been almost exclusively the specialities of the market gardener. The farmer in a general way possesses advantages which the market grower has not; he has a more extensive area of land from which he may select soil and position best suited to the various things he wishes to grow; he has a greater choice of implements, and when a green crop is not worth marketing, as in a plentiful season often happens, he can feed it off with sheep, so that if nothing is gained but little loss is experienced. Thus in the case of Turnips, from the time the first early Potatoes come off seed is continually being sown up to the middle of July, so that by August many acres are occupied with them. These are gone over as they become large enough and are marketed, whilst such as grow too large or are attacked by maggot are given to sheep. Sometimes, when the autumn is unusually fine, a great portion of the roots come too large for market, and sometimes the price is too low to make it worth while sending them there. When such is the case, it is but an affair of procuring a hundred or two more sheep. The market gardener proper cannot well do this, and crops of Cabbages, Brussels Sprouts, and other things spoil on the ground in plentiful years. It is therefore evident what great advantages must be derived from a combination of market culture and farming.

Potatoes.—In spite of the long drought, the Potato crop appears likely to be a good one. The tubers seem to turn out, even on light soils, tolerably large, and there is, so far as I can learn, no amount of disease worth speaking of. A grower here is offering good ware at 2s. 3d. per bushel on the ground, and there is no doubt that this is a good paying price and better than 3s. from the pit. Allowing two bushels to the rod, said an acquaintance engaged in agricultural and market gardening pursuits, a crop of Potatoes would pay better at that price than any kind of Corn. *Magnum Bonum* is the kind mostly grown for a general crop, but it varies much in quality, in some places coming really good, in others just the reverse. *White Elephant*, however, seems likely to have a good future before it, as it yields well under rather unfavourable circumstances. I saw some remarkably fine looking tubers the other day which came from almost pure sand, a soil which when it once becomes dry scarcely ever gets wet again before autumn. The quality, too, of this Potato is, so far as I have been able to judge, very fair indeed, much better than the enormous size of the roots would indicate. I would strongly advise those who have light soils which parch in hot weather to give *White Elephant* a trial. Amongst early kinds *Beauty of Hebron* appears to find favour with some; it is almost the only early variety grown by one large grower near here. It yields much more heavily than the *Ashleaf* varieties, but is very susceptible to disease, but as in the case of early Potatoes the object is to dig them as early as possible, they are generally cleared off before the enemy has time to hurt them badly. Speaking of the *Ashleaf*, the finest crop of it I ever saw was last year on light sandy soil, which had been trenched 2 feet deep. This Potato evidently likes a free soil and some depth of it.

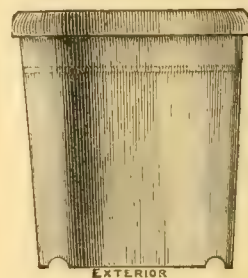
Lord Suffield Apple.—Mr. Bunyard thus writes concerning this Apple in the *Journal of Horticulture*: "The past few months, varied with occasional showers, have just suited this fine culinary Apple, and everywhere it has filled out and produced very clean, handsome fruits. An East Kent grower has a plantation on rising ground, which has this year borne about 3200 bushels of fruit, some of which measured 1 foot in circumference—not a bad crop, as the fruit is making 8s. per bushel if fine." There is no doubt that this Apple requires dry, warm soil, and is not suitable for heavy, low-lying land. After the severe frosts of 1880 and 1881 many trees perished and cankered; the wood, being soft and sappy, was penetrated by the frost. The foliage is also subject to mildew; sulphur applied with a flour duster is a good remedy. There is no doubt that summer pruning to let in sun and air is a great advantage, and planters will do well to plant *Lord Suffield* only in favourable situations. In Kent many thousands have been killed by overmanuring, the autumn rains stimulating a fresh growth, which is too green and unripe when winter arrives.

Tomatoes.—The wholesale price for these lately has been about threepence per pound, and outdoor crops will no doubt this year pay well at that price, seeing how exceptionally favourable the season has been for them. As a fact, good crops of Tomatoes have been obtained this year in situations not particularly favourable to this esculent, and where the conditions were right, undoubtedly a very superior yield has rewarded the grower of outdoor Tomatoes. Indoor fruit will have done as well in proportion, so that for a couple of months to come this now popular esculent will be cheap and good in the London markets. J. C. B.

Potatoes.—"W. I. M." makes a somewhat fierce onslaught upon Cosmopolitan, but he certainly merits sympathy when we find, in a season so universally good for Potatoes and showing less disease than has been seen for many years, that his are so badly diseased. As to selecting from *Lapstone Kidney*, which curiously enough he terms a good stock, several sorts that would pass muster in a show without producing disqualification, I would advise him not to attempt the experiment at the International Potato Show.—D.

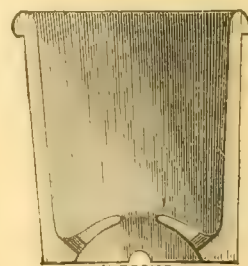
CRUTE'S PATENT FLOWER-POT.

THE following advantages are claimed for this flower-pot by its inventor: 1, to provide perfect drainage; 2, to save crocks being used so largely as in ordinary pots; 3, to ventilate the centre of the pot, thereby inducing a healthier and more vigorous growth; 4, to lessen evaporation; 5, to prevent insects and worms from entering the bottom; 6, to save space, being straighter, deeper, and wider at the base than other pots and holding more while taking up less space; 7, non-liability to clog when plunged, therefore specially adapted for *Chrysanthemums*, *Roses*, *Azaleas*,



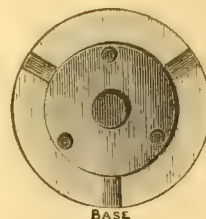
EXTERIOR

Camellias, and all specimen plants; 8, to facilitate re-potting, inasmuch as the plant remains erect in shifting and therefore not so liable to be damaged. When using this pot the plant is not turned up-



INTERIOR

side down, but the pot is placed over an upright stick which passes through the hole at the bottom, when by gentle pressure the plant with the earth intact is upraised, the empty pot sliding down the



BASE

stick. In order to facilitate this operation Mr. Crute has devised a kind of perforated cap, which, placed over the bottom, keeps the soil and roots intact in repotting. The patentee's address is Langton Lodge, Westhall Road, Honor Oak, S.E. The principle upon which it is constructed is good, and in many cases pots of this description will doubtless be found to be excellent.

Florists' models.—I must say that "M. R.'s" defence of the modern florist appears to me to be neither more nor less than an attempt to whitewash the latter at the expense of the older florists. The statement of "M. R.," that the present exhibitor "laughs at the precious models of the past or the simplicity of anyone who could fancy he took them for his guidance," is a staggerer when we read of and see the precious standards judges of florists' flowers act upon at the present time; when we find the arts of the dresser in greater request than ever, and an authority, like the author of "*Hardy Florists' Flowers*," stating at page 60 that "all the chances of success of some

as fine Chrysanthemums as have ever been grown were thrown away by not dressing the flowers," and putting others in that "the most skilful dresser could not by any means bring up to the standard required by the florist." After this I submit there is not much room left to laugh at the older florists. It does not matter much which is which, but do not let there be any delusion on the subject, nor allow "the pot to call the kettle black." If I wrong "M. R.," will he tell us where the new models that are now in vogue are to be found? The only ones to which I have access are no better than the worst which even Glenny conceived.—S. W.

FRUIT GARDEN.

STORING APPLES AND PEARS.

THE two opposite conditions of storing fruit mentioned by Mr. Muir last week cannot both answer the same end equally well. One of his fruit rooms, he says, is "a large airy room well lighted and fully exposed to the sun," and the other is on the contrary aspect, and has "very little ventilation." His experience is that the fruit stored in the last is decidedly inferior to that stored in the other, *i.e.*, a light airy room. The conditions in the two cases are the opposite of each other, and we can well believe that the effects upon the fruit would be the same, but Mr. Muir's experience is contrary to other people's in this respect. I am not sure myself that the ordinary fruit room of gardens is the best devised structure to keep fruit in, and I have said so before, but it is, as a rule, the only place provided for the purpose, and the question arises, what should a fruit room be like, and how should it be managed? All practical and scientific authorities on the subject are agreed, first, that a fruit room should be made thoroughly clean and sweet before the fruit is put into it; and, secondly, that after that it should be maintained at a uniform temperature and kept dark, conditions which can only be secured by insulation and shutting off all ventilation for the time being. These authorities are equally agreed that the kind of structure which meets these conditions best is one facing north, double walled, and close, and the worst kind of structure one like Mr. Muir's best house, which is light and airy, and exposed to the sun, because in the latter the fruit is exposed to every fluctuation of temperature that occurs, and may be now covered with dew from condensation, now dry, now cold, and now warm—vicissitudes which must exercise an effect upon the fruit either for good or bad; if bad, then Mr. Muir's airy structure must be bad for storage purposes also, and *vice versa*. The effects of light and darkness upon ripe fruit is a subject that has been often discussed apart from other conditions. The late Mr. R. Thompson, of Chiswick, states that it has generally been considered that fruit keeps best in darkness, and "it has been frequently observed that the finest specimens of Apples and Pears when placed opposite a window soon acquire a much inferior appearance to that presented by those left in the dark, and that it would therefore appear that full exposure to light is not favourable." Those American Apples that remain months in barrels stored away in cellars it is certain do not deteriorate in flavour, for the last of them came out almost as fresh and quite as good flavoured as when they arrived, and the barrels are dark enough, and practically air-tight. Last autumn, about the beginning of December, I saw some remarkably fine examples of Lord Suffield Apple, not a keeping kind, that had been buried in sand from the time they were gathered. Coming to one's own experience in such matters, I believe it is very much like that of others similarly situated, and it is unfavourable to airy and light fruit rooms having a southern aspect, because in such structures, although the fruit ripens sooner than it does in cool, dark chambers and quite as well, it does not keep nearly so well nor so long, and keeping, in my opinion, is one of the most important points in fruit storing. In fact, to keep the fruit for as long a period as possible is the chief aim of most gardeners. Our fruit room here was built with

double walls, double ceiling, and double floor, and it did not cost much if any more than a single walled structure. The aspect is north, and, provided the door is not opened too frequently, nor the windows or ventilators, it is surprising how steady the temperature remains in all weathers. Hence we find it invaluable for preserving all sorts of fruits at all seasons; also vegetables, such as French Beans in spring when we have a glut, Cucumbers, and even flowers when occasion has required. In a room of this kind I have seen Apples kept in perfectly sound and good condition without a wrinkle or blemish for two years at least, and that is as long or longer than most of us need to keep Apples and Pears. When Apples or Pears become ripe in the usual sense, I do not think the process of maturation can go on with advantage afterwards, as that means decay and loss of flavour, which in storage we should try to arrest, and that can only be done by placing the fruit where it will be cool, dry, and screened from the sun and air. J. S. W.

GATHERING AND STORING FRUIT.

APPLES are ripening with us fully a fortnight earlier than usual, and we have already gathered and stored quantities of such sorts as Cox's Orange Pippin, Newtown Pippin, King of the Pippins, Codlins of sorts, Cellini, and other good early ripening varieties. Most experienced gardeners probably require no advice as to when Apples and Pears should be picked, and how best to store them, but there may still be a considerable number of readers of THE GARDEN who may wish to see the subject discussed. No stated time or date can be given for picking of any kind, but everything should depend upon the condition of the fruit. If either Apples or Pears are gathered before they are ripe, or rather the seeds are nearly or quite ripe, the chances are they will never arrive at perfection; not a few of them probably will shrivel badly. On the other hand, if left too long many valuable fruits may drop or be damaged in the gathering, and I also find that for any kind of fruit to keep well it should be gathered before it has arrived at the dropping stage. There are two tests by which it may be discovered when Apples and Pears are fit to gather. If on cutting through a sound fruit the seeds or pips are found nearly or quite brown, the time has arrived for gathering; or if Pears are too valuable to cut, these may be tested by merely raising the fruit, and if found to separate readily from the tree that will also be a sure sign of fitness for storing. To leave any on the trees to become mellow, or fit for the table, is quite a mistake, as, with one or two unimportant exceptions, all kinds are better for being carefully gathered and stored for a few days, weeks, or months, according to their time of ripening. Even Apples intended for cider-making are kept several weeks before they are converted into cider. In some sorts the chemical changes are more rapid than in others, and in most cases it will be found that the more acid the fruit when gathered the better keepers they will prove owing to the longer time taken up in the conversion of the starch and acid into sugar.

BEST METHODS OF STORING.—Fruit rooms are usually found in connection with all large gardens, but these are not always suitable for the purpose, and are by no means absolutely necessary in all cases. The mistake often made is in building the fruit rooms too large and airy, as in such places the evaporation is too rapid, this naturally being followed by premature shrivelling. For Apples especially I would prefer a disused Mushroom house to a very dry, airy room. I have repeatedly observed that much heat and moisture or much heat and dryness are detrimental to keeping Apples. Cold and moisture, however, provided the air is excluded, insures long keeping, and is to be recommended for kitchen, but not dessert Apples, as under these conditions but little water is evaporated, and the chemical changes are less pronounced. Who, as a boy living in fruit-growing districts, has not frequently found perfectly sound Apples in the long Grass of orchards months after they had fallen from the

trees? Again, how surprising it has proved to some to find how well Apples will keep in heaps, provided the position is cool and the air excluded. The truth is we make too much fuss about storing Apples in single or thin layers on shelves in the orthodox fruit room. Better by far store them in heaps, hampers, boxes, or drawers, and not touch them till they are wanted, and keeping Pears may with advantage be similarly stored. This has been the practice for many years of one of the most experienced pomologists with whom I am acquainted, and this grower always appears to have Apples later and better than anyone else in the vicinity. Only perfectly sound fruits should thus be stored and these should be gathered when dry and stored at once in hampers, or, better still, clean boxes with lids. They will heat slightly, but the moisture given off will be re-absorbed by the fruit, and will serve to keep it plump and fresh. If Apples are too plentiful for this style of storing to be practicable, then I should advise that the keeping sorts be placed in heaps on the floor and lowest shelves, utilising the other shelves for the early ripening Apples and choice Pears. If the shelves are latticed or formed with stripes of wood, as they usually are, I would cover these over with paper, and place more paper over the fruit. This serves to check shrivelling, and is a good protection from frost. On no account should hay or straw come in contact with the fruit, as this material soon communicates a musty, disagreeable flavour to Apples especially, and also to Pears, though in a lesser degree. This fact cannot be too often repeated, as it is surprising how many there are who store their fruit among such material. Last autumn I tasted fully one hundred Apples in as many dishes at a fruit show, and out of this number more than half gave unmistakable proofs of their having been in contact with straw or hay, the former being the worst.

PEARS will not keep nor ripen so well in a low temperature as Apples, and not unfrequently it is advisable to place some of them in a warm house or in a box or drawer in the kitchen in order to hasten maturity. This plan is particularly commendable when there is a large crop of any one variety, the forwarding a part of them preventing an undesirable glut. It is useless, however, to attempt to ripen any kind of Pear or Apple long before its natural season. For instance, with us the natural season of the Beurré Diel Pear is from the third week in October to the end of November. In order to prolong this, by placing a few fruit that part readily from the tree at the end of September in a warmhouse, I might gain a week or ten days, but if I attempted to get them still earlier, they would colour well, and yet eat as "dry as a chip." Some sorts colour well when unduly hastened and remain fairly juicy, but quite sour; this is the case with both Marie Louise and Glou Morceau; others, again, grown in an unfavourable season have refused to ripen unless placed in heat. This autumn all the fruit stored will doubtless be fully matured, and will ripen naturally. W. I. M.

SHORT NOTES.—FRUIT.

Peach Stump the World.—Grown on standard trees this Peach is of very indifferent flavour; it would probably be better trained on wires or nailed to a wall. It is a very large Peach, but coarse in appearance, and the majority of the stones are cracked. The tree is a vigorous grower and a moderate bearer.—J. C. C.

Hale's Early Peach.—It may not be generally known that there are two varieties of Peaches sent out under this name—one much smaller and less highly coloured than the other, and also very inferior in flavour. The true sort is a large highly coloured fruit and the flavour excellent. The tree is not a very abundant bearer.—J. C. C.

Late Strawberries.—I send you some Strawberries of the Vicomtesse Hélicart de Thury variety. These are gathered from plants forced last March and April. After being gradually hardened off, I planted them out, the result being a good supply of Strawberries since August 11, and which will continue so long as weather permits. This is the third season in which I have had Strawberries throughout the autumn. I am now going to report a quantity for putting in the houses. By so doing I had Strawberries in December last year.—G. MITCHELL, *Perry Hall Gardens, Birmingham.*

Really excellent fruits, having regard to the lateness of the season, and they are of moderately good colour and flavour.—Ed.

NATURAL V. ARTIFICIAL ROCKS.

In the matter of constructing rock or rock gardens we have unquestionably made decided progress of late years, not only as regards making our rockeries suitable for the successful growth of alpine and other plants, but as respects artistic construction. When we look through gardening books, even down so late as Loudon's time, and see the hideous illustrations of rockeries there paraded as examples for imitation, it does not require the eye of an art critic to see the advance that has been made. How a garden artist of Loudon's ability could have sanctioned the publication of such examples in his books it is difficult to understand. Happily, we do not see many such specimens of rockeries now-a-days in good gardens. No one could possibly tolerate such absurdities if once they saw a really picturesque artificial rockery, such as those which may now be seen in almost every part of the country formed by Pulham, of Broxbourne. He has gone to Nature for instruction in the art, and hence his success in the creation of picturesque effects. When first formed his work may appear crude, but when weather-stained and partially draped with greenery, in many cases it requires a critical eye to discern whether art or Nature has been at work. In properly chosen spots artificial rocks are an invaluable aid to the landscape gardener in producing a pleasing home landscape, while on the contrary they produce an incongruous, if not an absurd, effect if placed in the back garden of a small suburban residence, or on a flat surface where none of the surroundings suggest rocky underlying strata. Anyone wishing to form a picturesque rockery, be he professional or amateur, should study little rocky scenes such as may be found in certain districts in Derbyshire, Sussex, and a few other counties, and of which the accompanying engraving is a good representation. Artificial rockeries may be constructed so as to be both picturesque and suitable for the culture of alpine plants, and in no place do mountain flowers have a prettier effect than when clustering round some great boulder in proximity to a cliff, from which it may be supposed to have fallen. The bane of most artificial rockeries is their monotonous surface, whereas in Nature one rarely meets with a gradually sloping bank studded with stones. Again, artificial formations are often too symmetrical; if a mound rises in one place, a similar one must, it is thought, be made a short distance from it in order to match it. Some of the most picturesque effects may be made by unearthing the surfaces of rocky strata in localities where rocks are known to exist. Of this some admirable examples may be seen about Tunbridge Wells. In one place in particular—Nevill Court, laid out some years ago by Mr. Marnock—the unearthing of the rocks has added largely to the attractions of the garden, and the same result attended similar operations at Glen Andre, near Groombridge, where the late Mr. Cook formed an interesting rockery in that way.

W. G.

Seedling Windflowers.—Anemones really put a floral girdle around the whole year. Just now our seedling beds of *H. coronaria* are throwing up flowers of the most vivid scarlet, salmon-rose, and blue-purple, all of which contrast pleasantly with *A. japonica* and its rosy and pure white varieties. *A. rutifolia* is also in flower, while the true summer Anemones (*A. rivularis* and *A. dichotoma*) have only just passed away. From now onwards through all the winter, if the weather is mild, our seed-beds will furnish flowers, the grand *feu de joie* coming in April as a welcome

to the Daffodils. Here we sow seeds thinly in February or March, and in this way we get far finer results than by planting roots in the usual way. The seedlings are transplanted if too thick, but the best results come from plants which remain and establish themselves where sown.—F. W. B.

INDOOR GARDEN.

LILIUM AURATUM IN POTS.

NOTWITHSTANDING the thousands of bulbs of this Lily that week after week are imported and sold through the autumn and winter months each succeeding year, it cannot be said that much way is made in its cultivation in the open ground. In a few places where the soil, natural or prepared, and the climate suit it, fine growth and abundance of flowers have been forthcoming; but success of this kind is exceptional, not by any means the rule. It may be safely said that in not more than one in a dozen places where bulbs have been planted have they gone on thriving and increasing in a way that can be reckoned satisfactory. Neither can its cultivation as a pot plant be set down as

it gets established in a healthy thriving state it will keep on for an indefinite time if the treatment by which it has been induced to thrive is closely followed; but success with apparently little attention often leads to inattention, whereby all the work is undone usually by deferring the operation of potting until the new root-growth has commenced, by which the tender fibres get injured in a way that seems to upset the whole system of the plant. I have seen instances of this kind with specimens as large as the Dundee example where late potting resulted in the ensuing season's growth not being half what it had been before, with a continued retrograde movement that nothing which could afterwards be done seemed able to check.

T. B.

SPECIMEN FUCHSIAS.

MR LYE'S method of growing large Fuchsias, as described by "R. D." in p. 199 of THE GARDEN, is new to me, but appears to have much to recommend it. By the usual way old Fuchsias are induced to go completely to rest for the winter, are pruned back early in spring and afterwards encouraged to break into new growth. Mr. Lye reverses this practice by pruning late in autumn and wintering the plants with some new growth to each shoot, which merely awaits the enlivening influence of the lengthening spring days to push away with increased activity. One advantage gained thereby is that the production of new shoots is rendered more certain and regular, the wood being plump and fresh, and the roots still active; whereas after the resting period some varieties are apt to partially die back or break very irregularly. Then, again, the plants can, if so desired, be brought into flower at a much earlier period. Such varieties as Mrs. Marshall and Rose of Castile would, if treated in this manner, be in full bloom in May or early in June, a great advantage where it is a question of embellishing large conservatories; and what can be more beautiful than a Fuchsia 6 feet high and thoroughly well grown? Still, it must be admitted that in some cases the old-



A natural rock garden.

an unmixed success, for under the treatment to which imported roots are subjected, not a few of them fail to grow, whilst many that do make an effort by blooming more or less the first season dwindle away afterwards. Yet now and then this grand Lily may be seen in such condition as to awaken regret that its well-doing is not more general. Of such was the exceptionally fine specimen shown at the recent Dundee show, and which has already been mentioned in THE GARDEN, yet about which a word or two more may not be out of place. So far as could be judged by the character of the flowers, and also the leaves and stems, the number of bulbs of which the specimen was composed appeared to all have been produced from one. It was grown in a pot about 18 inches in diameter; there were some twenty-five stems, the tallest of which was something like 9 feet high, and bore ten or eleven flowers. Like nearly all the largest specimens of this Lily I have seen that have sprung from a single bulb, it was a tall grower, and the variety only second-rate, the flowers being narrow in both sepals and petals, with the spotting less decided than is usually found in the dwarfier-growing, largest-flowered forms. A nobler object for a large conservatory than this Lily when in the condition of the plant described it would be difficult to imagine; and flowering when there is comparatively little in bloom makes it doubly valuable. So far as my experience goes with *Lilium auratum*, when once

fashioned way of resting the plants is preferable; indeed, it is often the only one by which large plants can be brought through the winter. Cellars, outhouses, and similar places can be used to store them in, and in late spring they can be brought out and be pruned and grown along in the open air. A very hard winter and a very mild one are, however, both to be feared; the former is apt to destroy and the latter to excite growth in the dark days. A friend of mine used to shelter his plants in an outhouse, along one side of which ran a flue connected with one of the glass-houses, so that in very hard weather frost could be excluded, whilst in open mild weather the doors which formed the front of it were thrown open. The plants averaged 7 feet high, and made a fine show in summer. In another place they were stored away in a cellar until February, and were then taken out, pruned, all the old soil shaken away and repotted, and placed in an orangery. They were many of them quite ancient specimens, but they always bloomed well; in fact, I consider that old Fuchsias as well repay time and labour bestowed as any tender flowering plant in cultivation. To grow large specimens in one year the cuttings should be struck in August in single pots, keeping them just moving in a light house through the winter. During the spring they should get a nice genial temperature, which will promote a quick growth without causing the wood to become drawn, and as the pots become fairly filled with roots, and before they can become pot-

bound, they should be shifted. Some kinds require stopping, others naturally assume a pretty pyramidal shape without it, but this can only be determined by actual observation of the peculiarities of each kind. Flower buds must be picked off and a stake affixed to each plant. In this way fine specimens 5 feet high well proportioned and clothed to the rim of the pot with healthy foliage will be formed by the middle of July. J. C. B.

SCARBOROUGH LILIES.

WHEN I wrote under this head (p. 261) my exact words were, "So far, I believe, this fine old plant has defied all the attempts of the hybridiser, and that numbers of such attempts have been made goes without the saying. I have never yet induced this plant to produce good seed, but shall try again this season." Now on p. 284 Mr. Cornhill says, "'Veronica' thinks that good *Vallota* seeds have never been gathered in this country," when, as a matter of fact, I never thought anything of the kind. I can, however, forgive Mr. Cornhill's inexact reading since he gives us such useful and practical information as to sowing the seeds of *Vallota* as soon as they ripen, a practice which has been adopted here with all sorts of seeds whatever for years, and with considerable advantage. I had a bulb of *Vallota purpurea* var. major from Colchester, and it was as big as my fist, with leaves 2 feet in length. Its flowers are like the type, but larger and brighter in colour, with more of a violet shade in the colouring. It is simply a stronger-growing and larger-flowered form of the self-coloured type.

V. purpurea eximia, which I saw long ere Mr. Bull sent it out, is a little less vivid in colour than the type in reality, although the whitish eye or centre of the flower lends some emphasis to its glowing perianth. If Mr. Cornhill will allow me, I shall be most happy to send him a bulb and flower of *Vallota purpurea*, the typical self-red kind as here grown. Can Mr. Cornhill tell us if anyone has successfully hybridised this fine old plant? I know that some of our best known raisers of new plants have been experimenting with *Vallota* for years, but so far as I am as yet aware without success. VERONICA.

Solanum jasminoides is a very beautiful climber for a cool house; indeed in the mildest parts of the kingdom it does well on open walls. In order to see it in perfection it must have plenty of root room, and where this is accorded it there are few more beautiful plants in cultivation. In this locality it does well as an open wall plant, and out of doors it keeps far cleaner than under glass, where it is liable to insect pests unless well attended to with water at the root and with copious syringing overhead. As a covering for a porch or verandah it is singularly well adapted, for if the main shoots are placed in the position it is desired to cover and the rest allowed to grow naturally, it will in autumn be a complete mass of lovely delicate blossoms. It strikes freely from young side shoots taken off with a heel and inserted round the edge of small pots in fine sandy soil. If intended for planting out, the young plants should be grown on in pots until they are at least 2 feet high, and well hardened off by full exposure to the open air for some time before the planting out occurs.—J. G., *Hants*.

Fuchsia triphylla.—It may be interesting to some to learn that this *Fuchsia*, of which a flowering plant at Kew was noted in THE GARDEN lately, is the species on which the genus was founded nearly 200 years ago, and that it was absolutely the last to be introduced to cultivation. Mr. Hemsley, of the Kew herbarium, wrote a very interesting history of this plant two years ago, when specimens of it were sent to Kew by Messrs. E. G. Henderson with the information that it had been collected by Thomas Hogg "in the island of St. Domingo, where it grows not over 18 inches high, and forms a round bush, every shoot being terminated with a raceme of orange-scarlet, wax-like flowers." Previous to this the plant had never

been seen in gardens, nor, as Mr. Hemsley states, was it known in the Kew herbarium. From an early period its identity had been lost, through another species having been associated with it, or rather, accepted for it. To the hybridiser this totally distinct species will furnish excellent material from which, in combination with other garden *Fuchsias*, a new race of these popular plants may be obtained. *F. triphylla* is not a botanical plant merely, but an excellent subject for the greenhouse, because of its neat, compact habit and the brilliant colour and distinct beauty of its pendent, tubular flowers. We have an army of garden *Fuchsias* whose number is legion, and many of them are as much alike as one red coat is like another. A new and distinct species may therefore be welcomed as giving promise of new breaks, new colours, and new forms.—B.

ORCHIDS.

ORCHIDS AT CRAIGLEITH NURSERY.

THERE always appears to be a fascination attached to Orchids such as is not observable in other plants. When once their cultivation is begun, if success is attained, it acts as a stimulant to further increase their number; hence the gigantic collections in private lands and for trade purposes that now exist. In accordance with this onward movement, Messrs. Ireland & Thomson keep on increasing their stock. The nursery is situated sufficiently far from Edinburgh to be beyond the influence of smoky vapours that are inseparable from a large town; and what is of even greater importance, the houses in which the plants are grown are not only constructed with a view to their affording the greatest amount of light to the occupants, but are placed on a knoll, where there is nothing that can in the least interfere with the light reaching the plants. The growth made is of the right sort, the bulbs and leaves being remarkable for their strength and solidity. Under such conditions, combined with the better state in which plants now reach this country, it is surprising how soon they get over the severe punishment they receive in their transfer from their native wilds. Here may be seen quantities of the leading kinds of *Cattleya*, such as *C. Trianae*, *C. Dowiana*, *C. Mendelli*, *C. Mossiae*, and others in large and medium sized plants that have been only a comparatively short time in the country, and have yet made top and root growth little inferior to that usually met with in stock that has been established double the length of time. *Dendrobiums* are grown in quantity and do remarkably well. One of the most beautiful of the whole genus, *D. Devonianum*, a kind that many growers do not succeed with, has bulbs of unusual size alike remarkable for their length and thickness and substance of their leaves; some of the strongest growths were quite 4 feet long and proportionately thick. Most of the other favourite species of *Dendrobiums* thrive equally well, particularly *D. formosum*, *D. Falconeri*, *D. thyrsiflorum*, *D. Wardianum*, and *D. Dearei*, the beautiful white flowers of which are excellent for bouquets. If proof were wanting, it is at hand here, that where the plants are exposed to a maximum amount of light, and are not subjected to a steaming, air-excluded atmosphere, many species can be well grown together that are often supposed to require considerable difference in temperature. In one of the long, low, span-roofed houses may be seen the different kinds of *Saccolabium*, such as *S. guttatum*, *S. Blumei*, and *S. ampullaceum*, with the warm kinds of *Aerides*, such as *A. quinquevulnerum* and *A. virens* side by side with *A. crispum*, *A. Lindleyanum*, *A. Fieldingi*, *A. Warneri*, and many other species that are often looked on as difficult to manage in the same house. Here the hot and cooler species appear to thrive equally well. *Cypripediums* grow like weeds and flower abundantly, as they usually do where well managed. *Odontoglossums* of the warmer kinds, such as *O. vexillarium*, *O. Roezlii*, and *O. Phalaenopsis*, are in fine condition, as are also the cool sorts, such as *O. crispum*, *O. Pescatorei*, and others, of which the stock is considerable.

Amongst other heat-requiring plants that succeed well here may be named *Nepenthes*, of which there is a nice selection, including *N. Northiana*, *N. bicalcarata*, *N. Rafflesiana*, and many of the distinct-looking new hybrids, of which there are now numbers that deserve a place. The plants pitcher freely, showing that the treatment they receive suits them. T. B.

A THIRTY-FIVE DAYS' ORCHID SHOW IN FRANCE.

IT is not often that one meets with an amateur who, with the laudable object of developing popular taste for a certain class of plants, is willing to run the risk of losing or at any rate impairing the health of some of his favourites for that purpose. Flower shows of long duration have very properly been practically abolished in this country, but they still remain the order of the day in nearly every part of the Continent. No one in England would, I apprehend, allow his Orchids to be exhibited for the good of the public for a period exceeding thirty days and away from his own place. The exhibition to which I refer was held at Rouen, in Normandy, where some 14,000 visitors daily paid homage to a display of flowers graciously furnished in a most disinterested way by that most ardent lover of Orchids, the Comte de Germiny. The exhibition was opened on August 25, when a most gorgeous, and I may safely say a unique, display of flowers took place. The intrinsic value of the exhibits, combined with the skill displayed in the grouping of the plants and the happy combination of flowering and fine-foliaged plants intermixed, rendered the whole most attractive; for, although Orchids formed the principal feature, and I may say the one best liked by the generality of visitors, still the show was not limited to that class of plants only. At the time of my visit—that is to say, about three weeks after the opening of the exhibition—there were still over sixty species of Orchids in full bloom, and as to the condition of the plants, that was above all praise. How could anyone refrain from admiring such a marvel as a *Cattleya crispa* over 3 feet across and bearing 125 blooms, or a *C. pallida* of the same dimensions with eighty-five flowers of a beautiful delicate blush colour; also an example of *C. Mossiae* of the same dimensions and carrying seventy-five superb flowers? *Cattleya Dowiana* grows wonderfully well at Gouville, and produces its rich blossoms in immense quantities; a few of them were still in very good form in the show, and amongst them one with blooms measuring 3½ inches across. *Lælia elegans alba* had twenty-six bulbs, some of which measured 26 inches in height. It is an exceedingly fine form, known on the Continent as the *Champlatreux* variety, a kind introduced at least some twenty years ago, and even now very seldom met with. Of other *Lælias* I noticed a fine specimen in grand health of the rare *L. Turneri*, carrying a spike of nine beautiful flowers, and another form of *L. elegans*, distinct from and handsomer than anything I ever saw in that way. The plant had twelve good strong bulbs, and its habit is that of *L. elegans alba*, with bulbs about 22 inches high. The spike carried six large flowers of very good colour and substance, the petals nearly meeting one another, and the lip, which was wonderfully fine, being fully 2½ inches across, and grandly coloured.

SACCOLABIUMS, which grow at Gouville better than anywhere else, were well represented at the show. Amongst them was a fine specimen of a very good variety of *S. Blumei majus*, bearing two compact spikes of 22 inches long each, and there was quite a unique plant of *S. retusum giganteum*. Several plants of a wonderfully good variety of *Odontoglossum grande* were also to be seen here and there lighting up the show; their spikes consisted mostly of six flowers each. Several good plants of *Odontoglossum Alexandræ* were dotted here and there, and allowed to display their graceful wreaths of lovely flowers. Good varieties of *O. Pescatorei* were also used for the purpose of giving the place a light, fairy-like aspect, and in all cases the plants were the very picture of health. Hanging against the pillars

were two superb masses of *Oncidium incurvum*, each furnished with five strong flower-spikes from 25 inches to 36 inches long, and on which there must have been thousands of pretty pale lilac flowers. Another beautiful and comparatively rare *Oncidium* which was the admiration of everyone was *O. Wentworthianum*, furnished with four flower-spikes, and carrying amongst them 116 branchlets, each bearing from six to fifteen flowers—a perfect cloud of wasps in miniature, so to speak. The *Vandas*, many of which were dotted about the house, were truly superb. *V. suavis* and *tricolor* were represented by specimens of from 4 feet to 6 feet high, and bearing from three to five shoots each. There was also a very fine *V. Batemani* nearly 8 feet high and well foliaged to the bottom. The lovely *Barkeria elegans* and *cyclorella* likewise made a very effective show, loaded as they were with hundreds of flowers of a peculiarly graceful drooping character. A grand example on a block of *Epidendrum vitellinum majus* was perfectly ablaze. It had fifteen flower-spikes, and by its side was an enormous *E. prismatocarpum* with an enormous quantity of blossoms. Grown on blocks also, or rather on pieces of board, were some grand specimens of *Dendrobium formosum giganteum*, with growths the size of an ordinary candle and terminated by quite a bunch of huge white blossoms blotched in the throat with yellow. The comparatively new *D. Dearei* was also well furnished with flowers, the pure white of which is gently relieved by streaks of pale green in the lower part of the tube. In addition to the beauty of the individual flowers, this plant possesses the advantage of being particularly well adapted for a thirty-five days' Orchid show, as under ordinary treatment its blooms keep their freshness for thirteen or fourteen weeks. From the roof was also suspended a remarkably fine specimen of *Grammatophyllum Ellisi*, which, like the previous plant, has been in flower for full three months; the display was very grand, there being sixty-eight flowers all open on the plant at one time. It was in a basket, and matched in size a huge *Coelogyne Massangeana* with eight flower-spikes, some of which measured 18 inches in length. The elegance of this plant cannot possibly be over-rated, and when its lovely nankeen flowers are open it never fails to attract attention. There are some grand plants of it at Ferrières, Gouville, Champlateux, and also in some more or less known places.

CYPRIPEDIUMS AND *STANHOPEAS* were also well shown at Rouen. They are very common on the Continent, every collection that one visits containing all the best forms of them, and even where there is no attempt at growing Orchids in a general way *Stanhopeas* may be found. They are of easy culture and very curious when in flower. There were hanging from the roof sixteen baskets of them, all in capital health, with foliage stiff and of a dark green colour; on some of the baskets we counted four spikes and a total of twenty-one flowers open at one time. *Cypripediums*, or *Lady's Slippers*, are also grown to a greater extent on the Continent than in this country; many, in fact, grow nothing or hardly anything else. Therefore it is not surprising that we found at the show *C. selligerum majus* with four spikes and nine flowers; and there was also a grand specimen of *C. Lawrenceanum* likewise with nine beautiful flowers. It is a plant that is rising in importance every year. Of *C. superbiens* or *Veitchi* I observed a very fine specimen carrying eight good flowers. This, though a comparatively old plant, is still one of the most striking of its class. Associated with these was a fine specimen of *C. caudatum*, an extra fine variety bearing two spikes and seven flowers. The above, with the addition of a few more plants of less striking character, such as *Oncidium Lanceanum*, *Miltonia Clowesi*, *spectabilis*, and *Morelliana*, *Cattleya Harrisoni* and *Gaskelliana* with nineteen flowers, *Odontoglossum roseum* with five spikes, *Phalaenopsis amabilis*, *Mesospinidium sanguineum*, *Aerides quinquevulvum*, and *Oncidium Papilio majus*, formed the bulk and undoubtedly the most interesting part of the show. I must not omit to mention, however, the grandest

plant of *Sobralia xantholenca* I have ever seen. It had twenty-one flowering growths, which during the time of the show produced a total of some eighty of its lovely yellow flowers. This is a plant quite unique in its way.

THE TASTEFUL ARRANGEMENT of the house was everywhere noticeable. Some beautiful *Gloxinias* were backed with handsome *Caladiums*. Among the former were some very excellent forms, and in many cases the flowers measured 3 inches across, and were produced in profusion even thus late in the season. I also noticed a fine group of *Achimenes* prettily edged with small Ferns and the dwarf-growing *Caladium argyrites*, and an equally low-habited variety with red foliage called *C. minus erubescens*. The centre bed contained, besides many of the plants already described, some grand specimens of fine-foliaged plants, such as *Maranta zebrina*, 8 feet through without a speck; *Phyllotanium Lindenii*, a superb variety, well variegated, and measuring over 5 feet through; also several examples of *Anthurium Andreanum*, an excellent variety, each plant carrying from six to ten flowers, and an *A. Scherzerianum*, quite unique. The latter, grown in a shallow tub, was in extraordinary good condition; the foliage was firm and dark, and the flowers very plentiful. I counted over forty open at that time, while in May last the same plant was literally covered with blooms. A magnificent specimen of the curiously mottled *Dracena Goldieana* and two superb plants of *Lapageria alba* and *rosea* about complete the list of plants at the show. There were, however, a good few *Nepenthes* hung up here and there along the roof, and being intermixed with the Orchids greatly added to the general effect. The show house was illuminated nightly by the electric light, the one styled the "Lampe Soleil," the light of which is soft and perfectly free from any fluctuations. After seeing this display of Orchids at Rouen, one would naturally imagine that the houses at Gouville would be nearly empty, but such was not the case; on the contrary, hardly any plants seemed to have been removed.

DISA.

Scuticaria Steeli.—This is not only a handsome, but a most distinct Orchid, there being but very few species having similar leaves. The latter are about a foot long, quite cylindrical, and very fleshy. The flowers are showy, being fully 2 inches across, with mottled sepals and a broad, shell-like lip, white, spotted and freckled with purple. It is not among the commonest of Orchids, but has been commoner recently. Messrs. Horsman, of Colchester, send us some fine flowers of it.

The Dunlop House Orchids.—A numerous gathering of orchidists assembled last week (25 ult.) at Stevens's rooms on the occasion of the sale of the collection formed by the late Mr. T. D. Cunningham Graham, at Dunlop House, Ayrshire, and which he liberally bequeathed to his gardener, Mr. D. Kemp. The reason why more than usual interest was taken in this sale was on account of the collection not only being uncommonly rich in choice varieties, but also owing to the plants being in such a vigorous state of health. There were numbers of magnificent specimens, and particularly of *Vandas*, of which there has probably never been sold at Stevens's such grand plants. For example, there was a pair of *Vanda suavis*, each of which could not have been less than 7 feet in height. One of these was *Veitch's* variety of *suavis*, and bore no fewer than twenty-two flower-spikes last season, and the plant was altogether a model of health and vigour. It was sold to Messrs. Sander & Co., St. Albans, for 30 guineas. The other plant, a fine variety of *tricolor*, went to the same buyer for 16 guineas. Among others of the largest prices were the following: *Angræcum sesquipedale* above 4 feet high, 18 guineas; another young plant with thirteen leaves, 15 guineas; *Vanda suavis* (*Veitch's* variety), 21 guineas; *Vanda Lowi*, 16 guineas; *Epidendrum prismatocarpum*, 15 guineas; *Cattleya intermedia*, a fine plant with about a hundred bulbs, 31 guineas;

Lælia purpurata alba, 16 guineas; *Vanda suavis* (Manchester variety), £17; *Cattleya Trianae Massangeana*, 10 guineas; *Cypripedium grande*, 10 guineas; *C. selligerum majus*, 14½ guineas; *C. selligerum*, 10 guineas; *C. euryandrum*, 10 guineas; *Lælia anceps Hillii*, 8½ guineas; *Cypripedium Dominicanum*, 11 guineas; *Dendrochilum filiforme* (had ninety spikes this season), 12 guineas; *Cypripedium superbiens*, 10 guineas; *Masdevallia Harryana splendens*, 14 guineas; *Lælia anceps Barkeri*, 7 guineas; *Cattleya gigas* (twenty-two bulbs), 6½ guineas; *Masdevallia Harryana conchiflora*, £7 10s.; *Cymbidium eburneum*, £8 10s.; *C. Lowianum* (Russell's variety), 11 guineas; *Odontoglossum vexillarium Cobbianum*, £7; *Coelogyne cristata* (Chatsworth variety), thirty growths, £5 10s. The total amount realised was £740, the number of lots being some 280.

WORK DONE IN WEEK ENDING OCT. 1, 1884.

SEPTEMBER 25.

At this season our work is sadly interfered with by the daily sweeping up required by pleasure grounds, and though, after long usage, we have come to regard such work as a matter of course, the temptation to shirk it is sometimes very strong; and it is particularly so in this grand weather that is so favourable for storing Apples, work that, with sweeping, has occupied all our hands to-day. Fruit gathering is so important that personal supervision of it is never dispensed with, and the Apples are really gathered, not pulled off and thrown into the baskets, but with care not to bruise them, and they are just as carefully put on the fruit room shelves, the final placing of them being deferred till a rainy day, when a job of that sort is pleasurable and comfortable work for the men. In and about the houses our doings have been preparatory of safely housing our winter stock of bedding plants; the pits and frames are being cleared out, and *Pelargoniums* that are being struck in boxes will shortly occupy these quarters, and next will follow those that have been struck in the open ground, and that will be potted on the first opportunity. Ridge Cucumbers are over, and the frames they have occupied are being washed, and their next use will be that of sheltering pot Strawberries. The unnatural mode of wintering these, viz., turned on their sides and stacked up, is so ridiculous that persons who practise it deserve—as indeed they court—failure. Our plants are left thin on the ground till severe frost occurs, being as regularly cared for in the matter of watering, weeding, and pinching away runners as they are when being forced, and well do they reward us for such autumnal treatment.

SEPTEMBER 26.

Carted manure heap from stables and threw it together, the freshest litter being mixed with leaves to renew the heat in Pine pits a week or ten days hence, and the dry and rotten were mixed together and well watered, and will be ready for the land quite as soon as we shall find time to use it. The most decayed of this heap will be used as a winter mulch for the Strawberry plots, the runners of which were again cut away and the ground weeded. A row or two of the old forced plants that were planted out early, being full of fruit, have to-day been mulched with clean straw, not that such fruit is valued now when there is an abundance of other fruits, but novelty counts for something now-a-days. The variety *Vicomtesse Héricart de Thury* is the only kind worthy of growing for autumn fruiting, and it is a kind that persists in fruiting at this season, whether it is wanted or not. Gathered several dozens of Peaches; the Nectarine Peach, *Lady Palmerston*, *Princess of Wales*, and *Gregory's Late* are the best kinds now in, and all are splendid in colour. *Lord Palmerston* is handsome, but quite worthless to eat, being so near akin to chewing rags, that we shall decline to give his lordship any quarter in future. If laid on dry, soft Moss, Peaches keep for a fortnight in a cool fruit room. Grapes have been examined as to removal of bad berries, and some of the ripest Hamburgs have been cut and put in bottles in the Grape room, as

here they keep more plump than on the Vines for the short time that we desire to keep them. Were they needed to be kept for a long time we would prefer to leave them on the Vines, using only just sufficient fire-heat to keep the air of the house lighter than the outside air to prevent condensation of moisture on and consequent decay of the berries. All our Grapes—even the Lady Downes—being now quite ripe, this is the treatment they all now have. Pruned our early vinery; the sorts are Black Hamburgh, Black Prince, and Golden Queen. Royal Muscadine and Buckland Sweetwater we formerly had as white kinds, but they have both been cut out in favour of Hamburgs. It was a mistake to plant Golden Queen in this house, as it takes so much longer time to ripen than Hamburgs, a point we were ignorant of when it was planted, but it does so well and is much appreciated, that we cannot afford to cut it out. The border is wholly outside, and has already had its annual dressing of new soil, and has been covered for the winter with dry stable litter and leaves. Every particle of the house, glass, woodwork, and Vines, will now be well washed and the walls limewashed; then it will be ready for the earliest Chrysanthemums that must shortly have house room.

SEPTEMBER 27.

Another round of cleaning up. The flower garden is as gay as ever, and we need no further incentive than its present effectiveness to induce us to do the necessary picking over of plants to make every part to match; mowing and clipping the edgings of beds, and cutting away all straggling growths was about all the work required to-day, the tying up of tall plants having been previously done, the warning being given by the windy day we had about the middle of the month. Pulled off the side shoots of several kinds of succulents, which will be inserted in pans or boxes and be placed in a warm house till struck. By thus getting a stock of such succulents, we can afford to sacrifice the old plants; hence they are left in the beds for the frost to do its worst, and the garden continues furnished for the longest possible time. Sweet Peas have again been picked over, and successional sowings are not required if the seed-pods are kept off and the points of shoots pinched out to induce a branching habit. Mixed flower borders are getting a bit untidy, and early Stocks and Asters have been pulled up, and a day or two hence their places will be re-furnished with biennial Stocks, Wallflowers, Sweet Williams, Canterbury Bells, and the like. Annuals are not much favoured for planting at this season, as they rarely winter satisfactorily, but exception is made in favour of Limnanthes, Nemophilas, Silenes, and Virginian Stocks, which are easy to raise, and usually winter well, and flower at a time when there is a great scarcity of open-air flowers. These kinds will be sown at once, and in the spots they are to flower; slugs are their only enemy, and we find wood ashes intermixed with the soil and strewn about on the surface a capital antidote to their raids. Indoor work has been pretty much as is usually the case on Saturday; washing and rearranging all and sundry. Early and second early Peaches are casting their foliage, and a gentle tap of the trellis brings a lot down, and for neatness sake this is cleared up and the mulching (which we always keep on) made tidy. Watered these borders, as never by any chance are they allowed to get dry, and by reason thereof we have no anxiety about bud dropping or of fruit falling at stoning time; also watered Pines, manure water being given to fruiters, but clear warm water only to successions. Bone manure and well-decayed horse manure being mixed with the soil, no other help is needed till after the fruit is formed and swelling. Tomato cuttings were put in and plunged in heat, and as soon as rooted they will be grown on quickly to take the place of those now fruiting. Hackwood Park and Earliest of All are the favoured kinds. Primulas are flowering too early for us, and so they (the flowers) have been picked off in hope of getting more growth of plant and a larger quantity of flower when it is

more required than now, and the same remark applies to Pelargoniums intended for winter flowering, part of which have to-day been housed.

SEPTEMBER 29.

Slight showers in the early morning enabled us to complete scythe mowing round trees and shrubby clumps, which, it is hoped, may not be again needed this year, or the cutting of the Grass edgings either. We like to have the Grass cut close now, as then the leaves are not nearly the trouble to clear up, and also, the turf being smooth, the wind sometimes drifts them together, and the work is done in half the time that would be needed were the Grass long. Hoeing in kitchen garden; Spinach, autumn-sown Onions, late Broccoli, Celery ridges, and Coleworts all had a share of attention. Seedling Lettuces were thinned out and the surplus plants pricked out on a south border as a reserve to fill up gaps or to supply friends. Pea and Bean haulm cleared away, and though the ground has to be trenched, there is no hope of getting at such work yet, and therefore the ground has been hoed. Violets planted in frames; Marie Louise is the most prized amongst doubles and Queen Victoria in singles. The plants have been grown during the summer on a north border in which plenty of vegetable mould was used, so that they lift with fine balls, and are not likely to feel the check of removal. They will be kept close for a few days till the roots start to work in the new soil; then air will be given, at first charily, but gradually increased till the plants will bear full exposure in all weathers short of actual frost. Frames are being prepared for Calceolarias and Viola cuttings, and some of the latter are being put in under handlights in the kitchen garden borders; the only cuttings taken are the shoots springing directly from the crown of the plants. Cuttings of strong shoots strike well enough, but do not grow so freely as the young shoots named.

SEPTEMBER 30.

Seeds of single Dahlias collected, some few plants of which we left for that purpose. The general stock is now in magnificent blossom, and being anxious to preserve them from injury by wind, all have been tied safely to their stakes. Blue Gums, Castor-oils, and other breakable plants, if not tied securely, have been examined and made safe against all ordinary storms, as also have tall growing herbaceous plants, such as Michaelmas Daisies and Sunflowers. Gathered the following Pears: Beurré Diel, Beurré Clairgeau, Marie Louise, Beurré Hardy, Passe Colmar, Seckle, and Duchesse d'Angoulême. Usually we have had these sorts by bushels, but this year a peck of each is above the average, and yet the blossom was marvellously fine, but the 4th of frost at the end of April, for three nights in succession, was too much for them, even though covered with canvas. By their enforced rest and extra amount of summer pruning the trees have had, they now bristle with fruit buds, and, provided we escape spring frosts, there will next year be the heaviest crop of Pears that there has been for many years past. Soil is being prepared for planting fruit trees and for top-dressing such as require it; newly-dug loam, with turf combined, wood ashes, and chalk is all that we use as a compost for hardy fruits of every description. A wheelbarrow-load of chalk and two of wood ashes to two cartloads of loam is about the preparation used, the turf being chopped into pieces about 4 inches square.

OCTOBER 1.

Apple gathering from old standard trees, Lemon Pippin, Hanwell Souring, Wellington, and Russet being the principal kinds gathered, and all are good crops for this year. Walnuts have also been gathered, or rather beaten down with sticks, and will be left in a heap for a few days until the husks soften and fall away easily. Watered late vinery borders, for though the Grapes are quite ripe, we do not believe in allowing the borders to get dry; at the same time, we take every precaution to prevent any ill-effects occurring through an over-moist atmosphere by watering early in the morning, and keeping the ventilators fully open as late as possible, and by firing a

little harder than usual for a couple or three nights after watering. By such treatment we have never noticed any ill effects from an overdose of atmospheric moisture, and to a certainty the Grapes keep more plump and do not lose colour as they did when we kept the borders drier. Pot Strawberries have had another weeding and been moved to hinder the roots from penetrating the ground on which they stand. The surface soil is never broken, as to do this would be destruction to many roots. Put in cuttings of succulents and placed the pans on shelves in Pine pits. Cuttings of Mesembryanthemums strike well in the same positions, and are being put in now, and room is being made in the manure frames for cuttings of Verbenas by taking out Alternantheras that are rooted and housing them on shelves in Melon and Cucumber houses. Potted Bouvardias that were planted out at the beginning of July. They have been put in warmth, and will be regularly syringed till established. No flowers are more valued than these in the depth of winter, at which season they are really at their best. Soft scale is their especial enemy, and the first appearance of it should be the signal for washing with strong soapy water, which as a rule prevents the further spreading of this pest. HANTS.

QUESTIONS.

5251.—Blackberry jelly.—Will someone kindly give me a recipe for making this? I have tried it, but could not get it to thicken.—ADOLESCENS.

5252.—Peach trees mildewing.—Will some one kindly name two early and three mid-season Peaches not subject to mildew on heavy land?—P. S.

5253.—Destroying wasps' nests.—I shall be obliged to "Hants" if he will state the price of cyanide of potassium and how to use it to destroy wasps' nests.—P. S.

5254.—Fern jars.—Can any of your readers give me information as to the best Fern, Adiantum or other, for growing on the Egyptian porous jars, and whether it is best grown from seed or small plants, and where these can best be obtained? Also how long the jar will take to become a ball of Fern, as I have seen one?—W. H.

5255.—Packing Ferns.—Will someone kindly say which they consider to be the best mode of packing Filmy Ferns to travel safely by post from Australia to this country? I have some recollection of seeing waterproof sheeting recommended for wrapping them in, but I do not remember the full particulars regarding it.—C. B. W.

5256.—Plants for aquaria.—I have got a Fern case with a small aquarium on its top about 8 inches by 10 inches and 8 inches deep. I am told that I might be saved a considerable amount of trouble and expense with my fish if I could get a plant that would grow in the water, and which would yield food for the fish and the refuse of the fish would yield nourishment for the plant, the water being at the same time purified. First, I want to know what is the name of this plant or if there is more than one; second, its appearance, so that I may know it; third, where I am likely to find it.—W. G.

5257.—Exhibiting fruit.—Will any of the readers of THE GARDEN give me any assistance in solving the following little difficulty regarding the exhibiting of fruit according to a schedule which runs as follows: "Twelve dishes fruit, not more than two distinct varieties of Grapes, two of Pines, two of Melons, &c." What I want to know is, can any exhibitor put more than one Melon down for one dish; for instance, if I had three small Melons, and thought any one of them too small to constitute a dish in itself, would I be disqualified in putting the three in for one dish, according to the reading of the schedule?—D. B.

5258.—Ripening Vines.—Will any reader of THE GARDEN kindly give me some advice as to the ripening of the wood of my Vines? They were planted in January, 1883. They did not make vigorous growth that year, but have done well this season. The growths of this year (with the exception of the three or four laterals on each Vine from the old wood) are still quite green. They have one bunch each, all colouring well and nearly ripe. They have had very little fire-heat till about three weeks ago when it was applied in order to assist them to ripen. At what heat should the house be kept during the day? and ought it to be quite cool without fire-heat at night?—C. H. S.

5259.—Stephanotis.—Can any of your readers help me under the following circumstances? A Stephanotis was planted out in a stove about ten years ago; it was trained to the roof, and allowed to grow without any restriction as to the roots. It flowered very freely till two years ago, but during the last two years it has not been satisfactory. It makes new growth to the length of say from 2 feet to 3 feet from all parts, but the points of the shoots and the leaves, with the exception of about three pairs at the base of the shoot, in a short time turn yellow and fall off; the leaves at the base of the plant remain healthy. I have taken away as much of the old soil as I could get at and put in new; the plant roots freely, but the same thing occurs again and again. The plant is never watered, but gets a considerable quantity from the floor of the stove. What can I do? I am thinking of thoroughly examining the roots, and, if necessary, pruning them.—J. S.

THE PALM HOUSE AT KEW.

My intimate knowledge of this magnificent building and its interesting contents must be my excuse for venturing to offer a few remarks on what has been said in *THE GARDEN* regarding its internal structure. Some years ago I was employed in this house, and the following observations are the outcome of my experience therein as a gardener. The remarks of the venerable ex-curator of the Royal Gardens (p. 284) on the fitness of this house for the plants which it is intended to accommodate well deserve the attention of everyone interested in the maintenance of our national plant collections. To me, however, a great deal remains to be said in regard to the difficulties in the way of any great alterations being made in the heating arrangements in the Kew Palm house. Everyone who is conversant with the requirements of plants under glass will admit that improvements might be made in this house from a purely cultural point of view. What has been said (p. 199) with regard to the iron grating which forms the floor of the greater portion of this Palm house is exactly what everyone must have felt who has had to do with the management of the plants it contains. The appearance of the plants in the temperate house at Kew, in the large house at Chatsworth, the conservatory at Glasgow, and other large structures where the plants are growing in beds is, from an artistic standpoint, very superior to that of the present arrangement in the wings of the Palm house at Kew. That all plants thrive better planted out than when in pots, given the other conditions essential to their health, is a fact well known to gardeners. Where the main object is to produce a striking effect with the aid of a selection of plants judiciously arranged, then beds are preferable to pots and stages. Selecting, then, only those plants that are likely to thrive best under the treatment intended for them, and limiting ourselves to just sufficient plants to produce the effect desired, a garden under glass, even a tropical garden, is easily designed and easily kept in order. This was Sir J. Paxton's idea when he built the large house at Chatsworth, and is the main object of the designers of almost all very large plant houses. The preservation of numerous and varied collections of plants is not their aim. In the temperate house at Kew the beds are planted with a selection of plants made chiefly with a view to their general effect, and the effect obtained is a particularly striking one.

The object for which botanical gardens have been established is not, however, the production of pretty or imposing plant pictures so much as the preservation of all kinds of interesting plant life. Collections of plants rather than a selection of the most beautiful and least difficult to manage are what we expect to find in botanical establishments, and though even at Kew it is not possible to find space for every plant of interest or beauty, as many as possible are accommodated, and I should be sorry to see large sacrifices made in order that a more imposing effect in arrangement might be gained. Kew is first an immense storehouse, and a picture garden afterwards. Admitting this, and I do not see how it can be controverted, there is much to be said against the extension of the beds in the Palm house at Kew in the way suggested by the respected ex-curator, Mr. Smith. The middle of this house is occupied chiefly by large Palms, and beneath them is planted an undergrowth of Aroids, Ferns, and other shade and moisture-loving plants. The number of large Palms does not exceed three dozen, whilst the undergrowth is of a distinctly made-up character planted for effect. They are most of them represented in other houses where they or their brethren can only be grown successfully, so that for purely botanical purposes the space occupied by them in the Palm house is entirely thrown away. During the winter most of them perish or get so sickly as to require their removal, so that there is a large renewal of these to be made every spring. The shade of the large Palms is, of course, the cause of this. All along the outside of the central portion of the house, and occupying the whole of the space in the wings, are vast

collections of all kinds of plants. These are growing in pots, and even when thus limited at the root it is found difficult to keep each one within bounds, so that it shall not affect the health or interfere with the growth of its neighbours. Palms, Pandanus, Cycads, Musas, Bamboos, and a large number of interesting economic plants along with many others of ornamental character have to be provided for in these positions, and anyone acquainted with the richness in number of species of the above families represented at Kew, the necessity for a restricting system of culture will be apparent. The beds are therefore not required in the Palm house beyond their present limits, unless there is to be a great sacrifice in the number of species and genera now cultivated in it. The only remedy for the "great obstruction" to good cultivation presented by the existing arrangement of pipes and floor appears to be the slating over of those portions of the latter where the plants have to stand. This would necessitate the removal of the whole of the pipes to where the paths now are; and, apart from the cost of such an alteration, it appears to me that the public would object to an arrangement which would compel them to walk over a mass of hot-water pipes, the heat from which during cold weather would render an inspection of the plants in this house as disagreeable as walking over a burning brick-kiln. It appears to me that the serious drawbacks to good cultivation which are experienced in the Palm house at Kew are practically beyond remedy, so long as a tropical temperature has to be maintained, even in the severest winters, in a house of such lofty dimensions where a vast number of plants have to be accommodated, and where the convenience and comfort of thousands of visitors have to be considered and provided for.

EX-KEWITE.

NOTES OF THE WEEK.

THE second public park established in the year in the borough of Huddersfield was declared open by Mr. Alderman Mellor, mayor, on Saturday last amid many signs of public approval. The park consists of 30 acres of land, and was purchased by the Corporation several years ago from the trustees of Sir John Ramsden, the lord of the manor, at £1000 per acre, Sir John also giving a contribution of £5000 and paying half the cost of making the roads round it.

International Potato Exhibition.—It was hoped that Messrs. Vilmoren, of Paris, who have one of the most complete collections of Potatoes in Europe, would have sent a representative display of them to the above exhibition which is to take place at the Crystal Palace on October 7 and following days, but they now write to say that the season has not been a favourable one for Potatoes in France. "We have had scarcely any disease," they add, "but the tubers are small; most of them are injured by May grubs, which have been so plentiful this year as to kill Rose and even fruit trees; and, besides, the later kinds are not yet lifted."

The Apple crop.—Messrs. J. W. Draper and Son, Covent Garden, have kindly furnished us with the following particulars respecting the present appearance of the Apple crop in Europe and America: *United Kingdom.*—Crop much below the average. *France.*—An average yield of early kinds, especially in the Gironde; late and better descriptions somewhat short. *Germany.*—Short crop generally. *Belgium.*—Short crop. *Holland.*—Very light crop. *Spain and Portugal.*—Crop short, description common. *America.*—There are indications that the crop will not equal in bulk that of 1880, yet the yield in some of the best producing localities is likely to be very abundant, and far superior in quality to the past two seasons. After mature consideration of the various reports there is little doubt that the crop of Europe is considerably under that of many years; thus it will be from America that the supply for the United Kingdom will be derived. The prospect of shipments being advantageously made to England were never more promising, particularly for the better and later description of Apples.

The white Agapanthus.—This charming plant bloomed with us for the first time this season, and, although not often met with, forms a good companion for the blue one, from which it only differs in colour. Everyone on the out-look for a good white bulbous plant should obtain this Agapanthus. Its blossoms, and also those of the blue one, are suitable for bouquets. What can excel the strong plants of the blue kind when bearing from ten to twenty of its matchless heads of bloom, and the one under notice is equally good? —J. CROOK, *Farnborough*.

LATE NOTES.

Tomato seeds (Sub.).—Wash the pulp from them and then dry them.

Lapageria leaves (Mrs. Y. Kenley).—Your leaves are parched and dying, but from what cause we are unable to say. There is no fungus or insect on them.

Princess Royal Rhododendron (J. P. R.).—This Rhododendron blooms at all seasons; yours now in flower in a pot plunged out-of-doors should be lifted and placed under glass.

Iaella purpurata (S. G.).—We cannot account for the bulb decaying in the manner it has otherwise than that the plant has been subjected to an excess of water, with a corresponding degree of cold. Keep the plants almost dry and raise the temperature of the house.

Gloriosa superba.—This beautiful stove bulbous plant was well shown in the form of a grand specimen at our late Farnborough show. It formed one of the six plants exhibited for a cup given by the Empress Eugénie, and a grand exhibition plant for autumn it makes when trained in a natural way, as this was. Its curiously twisted orange and red blooms are very showy, and it belongs to a class of plants that deserve to be more grown than they are. —J. C., *Farnborough*.

Storing Onions.—I find that Onions keep better when "roped," that is, tied round a stick or a wisp of straw, and suspended to the roof of a shed than they do when laid upon a floor or shelf. It is a mistake to store Onions in a warm place during winter. If they could be kept free from frost in a shed open on one side, they would keep better than in a more confined structure. I find the Brown Globe Onion to keep rather better than the White Spanish. —J. C. C.

Wasps in vinerias.—Having been plagued with wasps destroying my Grapes this season, I obtained a bottle of Davis' Improved Wasp Destroyer, and by placing a drop or two of it into berries that were partly destroyed and smearing the leaves with it in places near the bunches and ventilators I succeeded in clearing the house of wasps, though it was swarming with them; indeed, two hours after I applied the liquid every wasp was gone. A more effectual remedy I am not acquainted with. —H. Y.

Valloia purpurea.—I have before me in flower a seedling of my own raising. It does not differ from its parent, but another from the same capsule which flowered last year had smaller flowers and narrower petals, being thus more stellate in appearance, though there was no difference in the colour. These, with some others not flowered, are the produce of a bloom fertilised with pollen from another plant, but the precise history of the case is forgotten. The parent plant has not since formed capsules. —W. MITTEN, *Hurstpierpoint*.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received. In all cases where the numbers of the specimens sent are not mentioned, it must be inferred that the fruits to which they were attached are either local sorts, and therefore unknown at Chiswick, or that they are not in a fit condition for naming.

Names of fruits.—G. W. E.—3, Cellini; 5, King of the Pippins; 7 and 13, Alfriston; 10, Warner's King; 15, Wellington. Please observe our conditions of naming fruits.—D. Buchanan.—King of the Pippins. *—Other correspondents who have sent fruit to name will be answered next week.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—J. Crook.—Oxalis Bowieana; Lantana.—J. H. N.—Amaryllis Belladonna.—J. Parnell (Dorset).—1, Veronica incana; 2, Pyrethrum uliginosum; 3, Statice Limonium; 4, Sedum Thelypteris purpurascens; 5 and 6, varieties of common Achimenes.—T. A. H.—Next week.—E. M.—Veronica speciosa; Jasminum officinale; Myrica communis; Lonicera etrusca.—S. E.—Cupressus Lawsoniana.—W. E.—1, Achillea Ptarmica fl.-pl.; 2, Phyllanthus latifolia; 3, Artemisia Stelleriana; 4, Lamium maculatum.—Mac.—Next week.—Dorset.—Nerine crispa.—J. W. K.—Veronica salicifolia; a species of Cistus difficult to name out of flower.—Mrs. M. A.—Saponaria officinalis fl.-pl.—J. W. Ba'dwin.—Eupatorium verticillatum purpureum.—A. Boyle.—Narthecium ossifragum.—Fare.—Leonotis Leonurus.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

NAMES OF ASTERS.

TO-DAY'S post brought me a parcel from a gardening correspondent, containing forty-one bunches of Aster flowers, and a paper with these words, "I should feel much obliged for the correct names of enclosed Asters; signed, 'A. B. C.'" I felt just like the princess in the fairy tale, whose wicked stepmother gave her a basketful of mixed feathers belonging to fifty different birds, none of which she had ever seen, with peremptory orders to sort them all under their correct names before she had any dinner; but in my case no Prince Percinet came with his fairy wand to my rescue. It is true I had Asa Gray's new book describing all the North American Asters, but there are a great many Old World Asters in cultivation besides these, and even for solving the puzzle of the names of the New World kinds, Asa Gray's book was not exactly a *Deus ex machina*. That eminent botanist has worked harder and longer at the Asters, and knows more about them than anyone else in the world; but let him speak for himself. He says: "Aster is far the most difficult of our genera, both for the settlement of the names of the species and for their limitation, in respect to which little satisfaction has been attained as the result of long and repeated studies." Then follows a description of species, which require in the index a list of full 300 names and synonyms, and this, it must be remembered, is for the North American species alone. In addition to this, we are told with regard to several of the classes that "probable hybrids abound;" in other classes one species "appears to pass into the next," or we have the significant two words at the end of the characters given for a sub-division, "species confluent." The above remarks refer to wild plants, but when we come to garden forms and hybrids of cultivation, which include many of the finest Asters to be seen in English gardens, this great botanist finds the task of arrangement more and more hopeless. Neither height, nor length of leaf, nor size nor colour of flower are safe guides; we must examine obscure botanical characters, such as the imbrication of the scales composing the bracts of the involucre, the pubescence of the achenes, the rigidity of the pappus, and so on. But even these are owned to be inconstant and fallible guides, and nearly every species is liable to variations which falsify the tests. Then the cross-naming in these 300 names has been such that it is hardly possible to say that any name which can be given to an Aster may not be justified by some authority for it. For instance, the *A. puniceus* of Gray is the *A. blandus* of a second, the *A. confertus* of a third, *A. tardiflorus* of a fourth, their other names being perhaps retained by Dr. Gray and applied to different species. In some of the commonest names we read that there is the greatest difficulty in finding a standard to which to refer them. Thus in the case of *A. Novi-Belgii*, the botanical name of the commonest and oldest Michaelmas Daisy, we are told that it is low, or rarely tall, truly polymor-

phous, both in wild forms and in those of long European cultivation, many of which are not identified with indigenous originals; that it has been confused in name by different botanists of authority with *A. puniceus*, *A. serotinus*, *A. eminens*, *A. floribundus*, *A. latus*, and *A. longifolius*, whilst its varieties *lævigatus*, *litoreus*, *elodes*, and *thyrsiflorus* have each their fair share of synonyms. *A. lævis*, another very wide name, rejoices in seven synonyms. Of another common Aster we are told that *A. diffusus* is, on the whole, the best of three names of the same date. We are also warned that some Asters in their wild form may be from 2 feet to 8 feet high, that the lower leaves may be from 2 inches to 7 inches long, or that the rays may be violet, or purple, varying to white, and so on. I have made these extracts only to show the difficulties which still beset the gardener in search of Aster names, even after all has been done that botanical science can do to reduce the species to some definite forms; but, as has been before remarked, many Asters seed freely in English gardens, forming hybrids with any that happen to be near them, and some of our finest garden forms are undoubted hybrids, having been found on trial to fit on no wild standard. How are we to name these? Again, we have no Asa Gray for the European or Asiatic Asters, of which there are many, and some of them as polymorphous as any of their American cousins. The European *A. punctatus*, for instance, seems to include forms from 6 inches to 6 feet high, whilst *Boltonia indica*, as I was assured by a botanist who had studied it, has so many forms, that they must be made into a hundred species or all included in one. I speak of *Boltonia* as if it were an Aster, because for all gardening purposes it belongs to Aster, though allowed in the "Genera Plantarum" to retain its name; but the name Aster itself is most indefinite, and has recently swallowed up at least a dozen genera, whilst other species lately called Aster have been transferred to *Erigeron*, between which and Aster, Asa Gray informs us, he can discover no real line of distinction.

What is the moral to be drawn from all this difficulty and confusion of names? Certainly we ought to do our best to ascertain and adopt the names given by Asa Gray, admitted to be the best authority for all those Asters which can be identified with species described by him. It cannot be too often mentioned that he kindly undertook about two years ago to name the Asters growing in the herbaceous garden at Kew, and that this collection now affords the best standard for Aster names available in England; but it would be a great help to gardeners if some agreement of nurserymen could be obtained for the consistent naming of those fine garden forms which are not true species. I have more than once suggested that it would be a great gain if some public garden like Kew or Chiswick would devote a few beds to the exhibition of Asters with a view to securing uniformity. At present, it must be admitted nurserymen have an excuse, if not authority, for wrong names; but when we have, as Mr. Barr has told us, 300 varieties of Daffodil of which the names are determined, why cannot the same be done for Asters? C. WOLLEY DOD.

Edge Hall, Malpas.

Fuchsias near the sea.—These do so well in the southern counties, and, indeed, in most districts enjoying the sea breezes, that we often wonder more is not made of them. Two or three poor

things are grown where dozens might be found. Where an odd plant chances to show itself here and there, there might be well placed and well grown masses or groups of great beauty. The true secret of gardening is, adapting the plants to the soil and climate in the simplest and easiest way; this is also what would give us the greatest amount of diversity and charm in our gardens. Unhappily, the majority of people work exactly in the opposite direction, and everybody must have what everybody else has, even if it compels them to plant *Rhododendrons* in lime.

PLANTS IN FLOWER:

White *Salvia farinacea*.—Messrs. Damman, of Portici, send us flowers of a new variety of the Mexican *Salvia farinacea* having the flowers quite white. The spikes resemble those of *Lavender*, and the calyx being covered with a white mealy substance, as in the type, a pretty effect is the result. Messrs. Damman call it *S. amabilis alba*.

Single French Marigolds.—Messrs. Garraway send from their nursery at Clifton flowers of three kinds of single French Marigolds said to be the result of some years' selection by Mr. E. J. Lowe. They are pretty; one is a self of a brilliant orange, another has the florets orange edged with crimson-maroon, and the third also is prettily marked. Some may prefer these single-flowered sorts to the symmetrically rosetted double kinds.

Comte Brazza's white Neapolitan Violet.—This is now finely in bloom in the open border, and being thus early proves it to be a valuable variety. As it was I who obtained a first-class certificate for it last November at South Kensington, will you allow me to add that I purchased it from a firm who bought it direct from the raiser, Comte Brazza, and that I shall be pleased to send a box of blooms to one of the floral committee meetings if Messrs. Cannell will send flowers of Swanley White to compare with them, in order that the committee may decide the vexed question whether the two are identical or distinct? Messrs. Cannell courteously sent me a plant of Swanley White last summer to compare with Comte Brazza, and my experience of it was that it did not flower so freely in the winter as plants of Comte Brazza did subjected to the same treatment, nor were the flowers of the same size and substance.—WM. ALLAN, *Ganton Park*.

***Plumieria lutea*.**—The *Plumierias* do not appear to be free-flowerers, at least when cultivated in our stoves, but when they do yield to one's coaxings their flowers are exceedingly sweet and beautiful. We noted *P. rubra*, a handsome rose-coloured flowered species which bloomed at Kew last year, and now in the same establishment a plant of *P. lutea* is bearing blossoms. These are not unlike those of the *Neriums*, to which, indeed, the *Plumierias* are related. On the ends of thick succulent branches, and above the several whorls of oval-shaped leaves, a branching raceme of flowers is developed; each flower measures 2 inches in width and is white and canary-yellow, the latter colour being on the lower parts of the inside of the petals. When in bud the margins of the folded petals are bright red. A tinge of rose sometimes appears on the under side of the flowers. The odour of *P. lutea* is sweet and honey-like. In the West Indies these plants are called *Jasmines*, owing to the strong, sweet odour emitted by their flowers, and it is from this odour that the *Frangipane* scent is procured.

***Nerine filifolia*.**—Apart from the interest which attaches to this plant because of its grassy foliage and, when out of flower, very un-*Nerine*-like appearance, the beauty and grace of the flowers and their liberal production by the plant are characters of merit in a garden sense. A little potful of bulbs has, in the Kew collection, covered itself with grassy, or, as the name implies, hair-like foliage, and crowned itself with a dozen erect scapes of deep rose blossoms very elegant and very pretty. The scapes are a foot high, and are thickly covered with short, sticky glandular hairs. On the apex of each scape is a head composed of six flowers all open together and forming a neat little bouquet. *N. filifolia* was introduced to Kew about four years ago, from whence it has found its way into several other collections. Like all

the Nerines, this species requires cool treatment except when making its growth, and therein lies the whole secret of success with these plants. Instead of resting through the winter, as the Amaryllis and most other bulbs do, the Nerines make their growth at that period and go to rest in spring. Then they want no water, and should be set in an airy position exposed to the sun. In the autumn their flowers are produced. The cultivation of Nerines is therefore that of many other bulbous plants reversed. When making their growth, Nerines should be kept warm and moist; a half-spent hotbed in a frame with a southern aspect is the most suitable position for them. They all like a strong loamy soil.

Pancratium speciosum.—Here is a plant of really magnificent flower proportions, pure white, fragrant, full of grace, and one of the most easily managed of stove bulbous plants, yet how few know of its excellent qualities, or at all events, how few avail themselves of them. Introduced into gardens more than 150 years ago, when it was cultivated by Philip Miller, and since then again and again figured and eulogised by those who knew of its beauty, yet one meets with it but rarely, even in these days when white, sweet-scented, graceful flowers in the autumn and winter months are so highly valued. Here are the dimensions of a flowering specimen of this *Pancratium* in the Palm house at Kew, where several pots of it are now in flower.—Plant in a 9-inch pot, about three bulbs, bearing a dozen leaves, and two flower-scapes: height of scape or stalk, 12 inches; width of head of flowers on each scape, 16 inches; number of flowers in each head, seventeen and fourteen respectively; form of head, an immense bouquet. The flower is composed of a long quill-like tube 5 inches long, and six segments of the same length, spreading, curved, channelled, half an inch wide. In the centre of these is the cup formed by the united membranous wings of the stamens; this cup is an inch deep and is waved. The length of the whole stamen is 3 inches. On the tip of each is the yellow curved anther, which is suspended by its middle and really hangs by a thread. The whole forms a most beautiful flower picture.

Willdenovia teres.—A graceful plant of Sedge-like appearance both when in flower and when clothed only with its short green glume-like foliage. The stems are Bamboo-like, as thick as a quill, and very hard and smooth. All along the stems are numerous branches, which branch again and again until the whole branch has a thick bushy appearance like an immense fox-brush. These branches are 6 feet or more in length, and owing to the weight of the "brush" they curve over in a very graceful manner. The flowers are borne on the ends of the little branches, and are so numerous as to change the appearance of the plant to something like a collection of large graceful panicles, or plumes of brown beads or tassels. *Willdenovia* is a genus of the Restio order, which is confined to a number of Sedge-like plants found only south of the Equator. They are closely related to the Sedge order, numerous species of which just now adorn with grace and elegance the river and stream-sides of this country. The flowers of the *Willdenovias* are dioecious, that is, the male and female flowers are on separate plants. A male specimen of *W. teres* is now in flower in the succulent house at Kew, and we believe the large plant of this species which is in the Edinburgh Botanic Gardens, and from which the Kew plant originally came, is now in fine flowering condition. As a very ornamental plant for the conservatory, *W. teres* deserves to become popular. A descriptive account of the Restiads was given in the *Linnean Journal* some years ago by Dr. Masters, and we find that he there calls the plant under notice Restio subvertillatus. It is a native of the Cape of Good Hope.

The Moon flower (Ipomœa bona-nox).—In the time chosen by this plant for the expansion of its large beautiful blossoms we have another instance of those strange unaccountable freaks of which the *Nymphaeas*, some of the *Cactuses*, and several other plants recently noted in our pages

are familiar examples. The Moon flower opens only to the moon, and closes again at sunrise in the morning. A large number of the *Ipomœas*, and especially those of distinctly tropical countries, are, when under cultivation with us, given to closing their flowers at about noon. At Kew, in the Water Lily house, a collection of these tropical *Ipomœas* has been grown this year, and almost every one of them closed their beautiful flowers before the time for the admission of the public. In *I. bona-nox* we possess a truly beautiful annual climber, if it would but open its flowers in the daytime instead of at night. The Kew plant bore half a dozen flowers at the time we saw it, and these were in form similar to our common Bindweed, or a better likeness to their form is that of the flowers of *I. Horsfallia*. In size, however, there is a great difference, *I. bona-nox* being the largest flowered species known. It grows to a great length in a short time; the leaves are smooth, green, and heart-shaped, the petiole being brown. From the axils of the leaves the flowers are borne on four five-flowered peduncles. The tube is 6 inches long, greenish white, and the flat, pure white limb measures quite 6 inches across, or more than twice the size of the flowers represented in the *Botanical Magazine* (t. 752). *I. bona-nox* is cultivated throughout India, but its native country is South America and the West Indies.

Lantana Louis Benoit.—The *Lantanas* are pretty tropical weeds, which in some countries, and especially in the warmer islands of the New World, are to be seen covering every bit of available space in much the same way as Groundsel and the Spurgeworts do here in England. A good many of the species are worthless as garden plants, but amongst the many seedlings raised in this country we have some very pretty and useful little plants, both for the greenhouse in autumn and winter, and for bedding purposes in summer. One of the best of these is *L. Louis Benoit*, which is apparently a descendant from *L. crocea*, a native of Jamaica. It is dwarf and compact in habit, and when kept pinched back a little the shoots sprout freely, so as to form pretty little shrubs about a foot high, which when covered with numerous globular heads of deep orange scarlet flowers form neat little ornaments for the greenhouse. A collection of *Lantanas* might be grown so as to form a brilliant picture similar to what is done with the *Verbenas* in the open ground. Shrubby *Verbenas* the *Lantanas* are, possessing, as they do, all the brilliancy of colour and shape of flower head with which we are familiar in the more herbaceous *Verbena*. When well managed—and they are as easily managed as *Geraniums*—*Lantanas* flower freely for about ten months in the year. In addition to the above variety, *L. La Neige*, pure white; *L. Globe d'Or*, deep yellow; *L. Distinction*, orange-scarlet; and *L. Ne Plus Ultra*, rose, pink, and lavender, are good varieties for growing as autumn and winter flowering plants. A strong odour, like that of the scented *Verbena*, is characteristic of the foliage of all the *Lantanas*.—B.

NOTES OF THE WEEK.

International Forestry Exhibition.—Revision of awards.—It will be remembered that as soon as the list of awards at the Forestry Exhibition at Edinburgh was published, much discontent was evinced by the exhibitors. This has led to a revision of the awards, and the following is a list of the exhibitors of trees and shrubs, &c., who have been awarded medals. *Gold medals.*—James Dickson and Son, Newton Nurseries, Chester, for trees and shrubs; the Lawson Seed and Nursery Company, for trees and shrubs; Little and Ballantyne, Carlisle, for coniferous and deciduous trees; Thos. Methven and Son, Edinburgh; James Veitch and Sons, Royal Exotic Nurseries, Chelsea, and special diploma for trees and shrubs; Vilmorin, Andrieux, and Co., Paris. *Silver medals.*—Dickson and Son, Chester, for tools, seeds, &c.; Lawson Seed Company, for seeds; Little and Ballan-

tyne, for cones, seeds, and tools. *Bronze medal.*—B. Hartland, Cork.

Sale of Orchids.—On Wednesday last the collection of Orchids formed by Mr. Oscar Lamarche, of Liege, was disposed of at Protheroe and Morris's rooms, Cheapside. There were over 400 lots, some of the highest priced plants being the following: *Anguloa Clowesi*, with thirty-seven bulbs and seven growths, £14 14s.; *Cattleya labiata Warneri*, £21; *Cattleya labiata Pescatorei*, £24 3s.; *Cypripedium caudatum roseum*, a fine variety, £8 10s.; *Epidendrum prismatocarpum*, specimen with over 100 bulbs, and twenty-four flower-spikes, £18 18s.; *Vanda Lowi*, an unrivalled example, from the collection of Mr. Schiller, of Hamburg, 4 feet 6 inches high, with thirty-two leaves, two young growths and flower-stems, £68 5s.; *Cattleya Gaskelliana*, with eleven bulbs and two growths, £9; *Vanda Lowi*, nearly 2 feet high, £32 11s.; *Vanda tricolor Wioti*, £10.

Nova Scotian Apples.—A silver cup, presented by Messrs. Nothard & Co., Tooley Street, London, added to the sum of £14 10s. given by the Crystal Palace Company, offered for the best collection of American Apples, was competed for at the Crystal Palace on Tuesday last. There was an extensive display, in all numbering about half-a-dozen collections, and all being for the most part excellent in quality; indeed, except as regards the numbers of the dishes in the respective collections, there did not appear to be much distinction as regards merit. The majority of the fruits were of high colour, but there were not many dishes of very large fruits. Those remarkable for size were Emperor Alexander and Gloria Mundi. Judging from a cursory examination, we should say that the names which the Nova Scotian growers have for their Apples do not accord with our own. For instance, the sort they have for Ribston Pippin is very unlike the true English variety; many other familiar English names of Apples seemed to be also misapplied. The finest collection was that from Dr. McLatchly, of Wolfville, Nova Scotia, who had about a hundred dishes, and of similar extent was the second prize collection from the Fruit Growers' Association of Nova Scotia. Altogether these collections, though attractive in appearance, did not favourably compare with the exhibits from the Kentish orchards on the adjoining tables.

QUESTIONS.

5260.—*Dipladenia amabilis.*—I have a large bulb of *Dipladenia amabilis* which refused to start into growth this summer. Is it worth keeping? or is there any prospect of its starting next spring? It looks perfectly sound and healthy, like a large *Gloxinia* bulb.—G. T. B.

5261.—*Freessias from seed.*—I am anxious to get information respecting the growing of *Freessias* from seeds as I possess some just ripe from flowers which bloomed here during the summer. Perhaps some of your readers will kindly furnish a hint or two on the subject.—S.

5262.—*Bleaching Pampas Grass.*—The plumes of my *Pampas Grass* have now been out a fortnight, and I should be much obliged if any of your readers could tell me when to cut them and also how to bleach them; and if chloride of lime is to be used, kindly state in what proportion?—C. T.

5263.—*Frosting plants.*—Will any of the readers of THE GARDEN kindly tell me how to frost plants and cut flowers for the dinner table? I do not agree with the practice myself, as to my eye it spoils the look of any plant, but as it is required it must be done, and I shall be glad to know the best way of doing it.—A. F.

5264.—*The Scarborough Lily.*—How should the *Valiota purpurea*, or *Scarborough Lily*, be treated after flowering? Should it be kept perfectly dry during winter? When does it make its principal growth, before or after flowering? A large bulb of the white-throated variety is now throwing up two strong flower spikes, but it has already lost all its outer leaves. Is this right?—A. J.

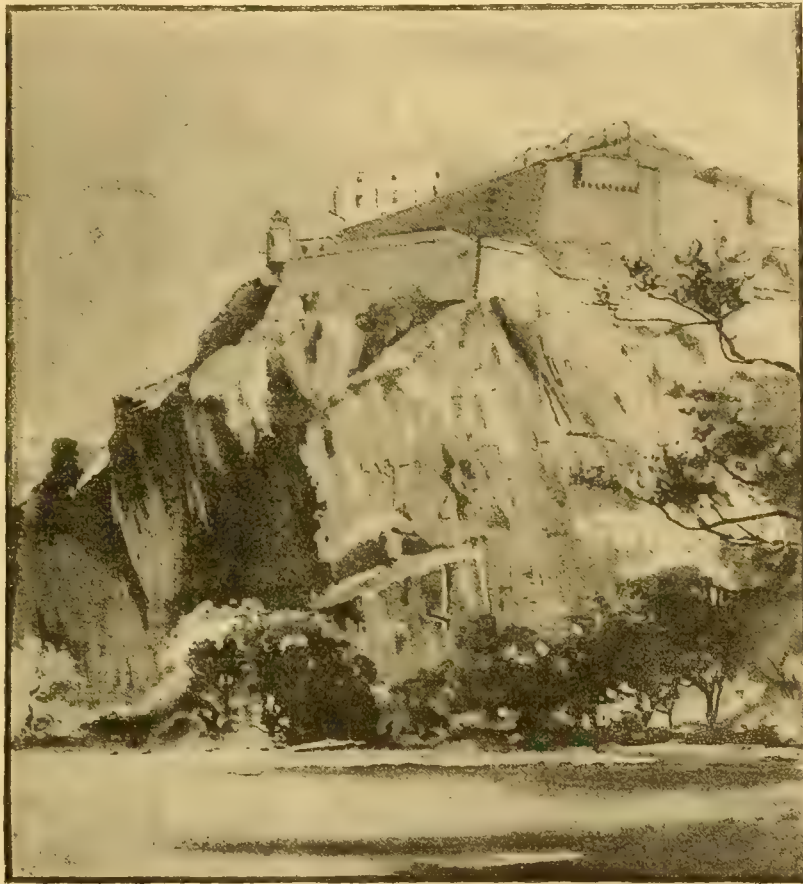
5265.—*Anthracite coal.*—Can any of your correspondents give me information as to the suitability of this coal for horticultural purposes, and its relative value to coke and hard steam coal? It is asserted by some that anthracite coal is an advantageous and economical substitute for coke, burning twice as long, requiring less attention and stoking, and giving a steady heat; and by others that it burns fiercely and rapidly, and in many instances has led to the bursting of the boiler. Apart from the question of economy, it would certainly be a great convenience to employ a fuel which was less bulky and more powerful than coke. Perhaps some of your subscribers will be able to give your readers the result of their experience in this matter.—ALPHA.

SOME FEATURES OF SCILLY VEGETATION.

THE guide books have all something to say anent Holy Vale, but it offers no great enticements beyond its vigorous vegetation. Being the most sheltered of any spot on St. Mary's, some forest trees have here attained a fair growth, and for the same reason it is a good hunting ground for Ferns. In the middle of one of its farmyards may be seen a round plot edged with stones and planted with *Dracæna australis*, *Agave americana*, *Phormium tenax*, *Fuchsias*, and *Geraniums* grown tall and ragged. As the ground in the vicinity is truly farmyard in appearance and is a favourite parade of the pigs, we may fairly put this down as one of our features. Nor is this feature confined to Holy Vale, for frequently the hens may be seen scratching holes at the base of New Zealand Flaxes, and clothes-lines are often fastened to *Dracæna* trunks. The cemetery at St. Mary's and the churchyard of Tresco are both planted with the same tropical vegetation. The *Euonymi*, although previously used as hedge plants, have had to give way before *Escallonia macrantha*. If this latter were only a foliage plant it would be beautiful, but with its flowers added it deserves the superlative degree. Throughout the entire course of the year the Scilly fields and gardens are brightened by it, and though its greatest profuseness of bloom is in June, yet there is hardly a day on which a blossom cannot be picked. This being likewise the case with the *Geraniums*, it is somewhat curious how little the islands are used as a winter resort. The sea is often enough as calm as in summer in December and January, and on the land, even if it blows hard for weeks, it does not do so for fortnights. Few of the visitors seem to know the Tamarisk; but there are a class of men who boast of their ignorance of plants in the same stupid way as many undergraduates do of their ignorance of divinity. It is the commonest form of shrub on the islands, and growing up to the verge of the sea it is a pleasing substitute for the white and red stones and shells with which so many sea-bordering gardens are decorated. Its *Spiræa*-like flowers and *Asparagus*-like foliage are a pretty combination. The commonest weed is perhaps *Mesembryanthemum edule*, the pretty yellow flowers of which do not entirely disappear until late in September. Although the natives do not use it like the Hottentots, they allow and help it to spread. In parts of Old Grimsby on Tresco Island it is laved by the high water and suffers no hurt. It was one of the far-seeing introductions of the late Mr. Augustus Smith, to whom and his nephew, the present lessee, so much of the present prosperity of the islands is due. Although only forty years introduced, it now forms such spreading banks and is so widespread as to appear indigenous. It is of the greatest value for binding sandbanks, and, as it speedily forms soil for itself, thrives as well as could be desired on shallow or stony places or on walls. Another wild plant plentiful at Old Grimsby is the common Sea Holly, which is by no means the least attractive of the *Eryngiums*. The highlands of Tresco,

especially above Cromwell's Castle and the wild precipitous coast that bounds the islands on that side, are covered with Gorse and Heather. As in this wind-swept region in barely more than 4 inches or 5 inches of soil they are both about the same height, their beauty when in flower together is dazzling. Indeed, a painter, for fear of exaggeration, would be more than half afraid to put it on his canvas.

The *Geraniums* in the cottage gardens are never lifted, nor are the *Fuchsias* and *Veronicas*. Of this latter plant there are a number of varieties grown, which form large bushy shrubs, and are as floriferous as can be. They are at their best in the first weeks of August. No garden is complete without an *Aloe* and a tall *Dracæna*, and in most is a *Hydrangea* bush bearing large trusses of blue flowers. Mr. Vallance told me that one of his men when he first came to Scilly brought to him



The Edinburgh Castle Rock, from Princes Street Gardens.

a Laurel spray and asked him the name of the tree it came from, as none of them knew. And writing now, after a lapse of three weeks, I can remember *Camellias*, *Griselinias*, *Myoporums*, and other shrubs in plenty, but never a Laurel.

Ferns, except *Bracken*, cannot be said to be plentiful. In various niches on the rocky seaboard can be found *Asplenium marinum*, and it also can be found in a deserted well at St. Helen's and in the holes overgrown with *Briers* on the downs of Tresco. *Osmunda regalis* is only, I believe, to be seen in St. Mary's and in the Tresco Abbey Gardens. *Lastrea recurva* and *spinulosa* also grow in St. Mary's, and at St. Martin's are to be found—at least it is said so—*Ophioglossum lusitanicum* and *Botrychium Lunaria*. The Lichens in Bryher and Tresco are very diverse, there being nearly twelve kinds.

The best account of Scilly vegetation, however, is an account of the Abbey Gardens, which I shall try to give your readers an idea of in an early issue.

C. A. M. CARMICHAEL.

A garden picture.—A south-western angle of wall and buttress of warm grey sandstone clothed with *Pomegranate* and *Smilax* for background. Close against it a group of *Belladonna* Lilies, fringed with well-flowered tufts of *Peruvian Swamp Lily* (*Zephyranthes candida*). The *Belladonna* flowers would rise naked from the ground, but that they are thickly carpeted with the beautifully veined leaves of Italian *Arum*. A few years ago I read in *THE GARDEN* of this combination of *Belladonna* and *Arum*, in a note written, I think, by Mr. F. Miles, and acted on the useful suggestion. It is a combination that cannot be too strongly recommended.—G. J.

THE EDINBURGH CASTLE ROCK.

THE Edinburgh folks are justly proud of their public garden, which occupies the beautiful valley between Princes Street and the noble rock upon

which the castle is built. This rock, rising out of the gardens, as it were, in imposing grandeur, renders them strikingly different from any other public gardens in Europe. As will be seen, its sides are almost perpendicular, but here and there are rugged ledges which give a foothold to colonies of plants, thus varying the tone and colour here and there of the rocky mass. In the presence of so much grand natural rock one would have thought no one would have attempted to form artificial rockeries. Yet such has been done, and that without much taste, almost at the very foot of the noble precipice. If a rock garden had been wanted at all, why not have scattered a few huge boulders about in an irregular and picturesque manner, so as to suggest a connection with the main mass? A rock garden could even have been made by scattering on the ledges of the castle rock seeds of such plants as could hold their own under such circumstances. Colonies of *Wallflowers*, for instance, might be so placed as to lend a glow of colour quite in harmony with the general tone of the rock, and in no way detract from its majestic appearance. *Antirrhinums*, *Erinus*, *Ferns*, *Linarias*,

and many other plants would also be admirably suited for the purpose. Whether the rock is clothed with flowers or not, however, one thing is certain, and that is that the gay prettiness of the geometrical beds dotted about the gardens on the fresh green turf diminishes the grandeur of both rock and garden as viewed from Princes Street. With the exception of what might look like growing naturally on the rock, there should be no masses of violent colours within sight of the castle hill, much less in the middle distance where we now find them.

NOTES FROM FRANCE.

SHORTLY after the Paris Exhibition of 1878 George Augustus Sala wrote a book entitled "Paris is Herself Again," and the only fault I have to find with which is its title, for I do not think that Paris is herself again. Be that as it may, however, I am only going to speak of Paris horticulturally. And how, let me ask, has it fared since the days when

"The Parks and Promenades of Paris" was written—a book, by-the-by, which has more than anything else tended to make our parks and promenades worthy, and not altogether unsuccessful rivals of those of the French capital? It struck me, although I may be wrong, that there is a cheapness about the manner in which things are done now that did not prevail then, such as the much larger employment of annuals, Marguerites, and plants of that character, to the exclusion of more expensive sub-tropical plants. That little bijou of a public garden, the Parc de Monceau, still maintains its pre-eminence as the most aristocratic looking of the public places. I noticed much the same style of decoration as used to prevail—the same plants which have probably done duty for many years, the Tree Ferns, Musas, and Palms, dotted about over the grounds. The only new plants that I saw employed since my last visit four years ago were the tuberous-rooted Begonias. Of these there were a large number of beds, some self-coloured all red, others red and white mixed, which had a pretty effect. The Cannas, especially Ehemanni, and Caladium esculentum looked remarkably well, the hot, dry summer having suited them admirably, while the perfect system of watering here adopted tended to keep the Grass fresh and green. The Champs Elysées looked very much the same as usual, except at the Rond point, where Begonias were employed as in other places. Beds of double Dahlias were frequently to be seen, but nowhere did I notice the single varieties, which have obtained such favour with us, employed. They are not sufficiently showy, and their habit of so quickly shedding their flowers and going to seed makes them troublesome plants to use. It seemed to me that in making the new streets, which are as usual planted with trees, the Ailanthus is not as much employed as it used to be, and that the Plane has taken its place; probably it has been found, as with us, to be the most suitable tree for town life, but to me the by far most interesting piece of gardening that I saw in Paris was the garden connected with the beautiful hospital for British subjects, the Hertford Hospital, which the munificence of Sir Richard Wallace has founded. Of the building itself I must say but little, save that in appearance, in everything that a hospital needs, in the comfort and even luxury which is provided for the inmates, and in the completeness of all its details, it leaves nothing to be desired; and when I say that although it accommodates but thirty-five patients, that yet it cost £40,000, this can readily be imagined. After having been shown all over it by the courteous physician, the Hon. Alan Herbert, he said, "But I must show you our garden, of which we are not a little proud." I went out with him to see it; it was a nice, cool, shady-looking, well-kept place with tall and healthy looking trees some 20 feet or 23 feet high, and affording a delightful place for the convalescent patients to walk and sit about in. Four years ago he said this was nothing but a rough piece of ground, without a blade of Grass or a shrub in it. I opened my eyes with astonishment; but so it was; the trees had been transplanted, the shrubs had been also removed from other places full sized, and only one tree amongst all the lot had died. I have often seen the successful removal of single trees, as, for instance, at Mr. Dickson's, near Exeter, but it is the first time that I have seen so bold an attempt to make a garden by their wholesale removal. Anyone going into it would imagine that the whole thing was at least twenty years old. The trees are Poplars, Elms, Planes, &c. Of course, it was an expensive business, but then Sir Richard Wallace does not mind that, especially when so great a boon was to be conferred as this delightful garden for convalescents.

And now for a bit of heresy, for which, perhaps, I shall be impaled, after all said and done, about the public parks of Paris, I do not think that Paris is for one moment to be compared in this respect with our own dear smoky metropolis. If you want to get to a park in Paris you must drive out some couple of miles to the Bois de Boulogne or Vincennes, and when there you

have nothing to compare with the grand trees of our parks. Where can Paris show such an extent of green sward and fine-looking trees close at hand as St. James's, the Green Park, Hyde Park, and Kensington Gardens, and now that attention has been directed to the bedding-out, in this respect they have no advantage over us. It is the climate which makes all the difference, the clear bright air of Paris throws a glamour of its own over everything, while the dark and too often sunless atmosphere of London is more of a pall than anything else. If ever the happy time should come when we have other lighting, except gas, or when chimneys shall be compelled to consume their own smoke, then may some enthusiastic Frenchman write us a book on the "Parks and Promenades of London," for besides those in the heart of the metropolis we have Battersea, Finsbury, and Victoria Parks, and other smaller places are springing up. We have certainly nothing that can compare with the Buttes Chaumont, but that is because there are natural advantages there we cannot expect to have. We have nothing quite like the Parc Monceau, but many pretty bits might be found in the Battersea Park Gardens; and what with the Thames Embankment and the many improvements that are continually taking place, such as at Hyde Park Corner, we may, I think, ask the Parisian to admire our parks and promenades as much as we have done his. At any rate, such was the impression made on me on my last visit.

DELTA.

FLOWER GARDEN.

NEW FRENCH HYBRID GLADIOLI FOR 1884.

DURING the fine, warm, old-fashioned summer with which we have been favoured this year, and which in gardens where there was no lack of water conduced so eminently to the full development of all floral beauties, if also unfortunately to their too quickly passing away, I have again grown, for comparison with older varieties and side by side in the same bed with those of last year, the eight new varieties of the above-named beautiful plants, raised and sent out towards the end of last year by that well-known and most successful hybridist and raiser of new flowers, Mons. Victor Lemoine, of Nancy. Some brief account of the relative merits of these varieties may, I hope, be interesting to some of the readers of THE GARDEN.

The first variety, C. Heinemann, commenced to bloom on July 13, and has medium-sized flowers of a dull shade of purplish red with carmine blotches on the lower petals, the outer half of which are clear yellow, produced on a freely-branching flower-spike. This variety shows the traces of its purpureo-auratus parentage more clearly than almost any other of its more recently raised brethren.

GUERRIER DE DUMAST also commenced to bloom on July 13, and is a vigorous, free, tall-growing variety, with medium-sized flowers of a bright fiery-red with distinctly marked blotches of a velvety purple on the lower petals.

MOROT commenced to bloom on July 14, and is a vigorous-growing variety, with rather under medium-sized creamy white flowers slightly shaded with rose colour on the margins of the petals and with a small purple blotch on each of the three lower petals. A very pretty variety.

AMIRAL PIERRE commenced to bloom on July 16; is a variety of medium height with well opened flowers of a deep shade of salmony-red with a single distinct carmine blotch on the centre of the middle lower petal, which is fringed with a broad band of clear canary colour.

MEISSONNIER commenced to bloom on July 20, a variety with free-branching habit of growth and medium-sized blooms of a light cherry-red with distinct carmine blotches, each bordered with a pale primrose band in the centre of the lower petals.

W. E. GUMBLETON commenced to bloom on July 28; is a tall vigorous-growing variety, with fine, large, well-opened flowers of a pleasing shade

of light rose colour flaked with carmine (reminding one of Souchet's beautiful old variety Achille in shade of ground colour), and with a deep rosy purple blotch, tipped with creamy yellow on each of the lower petals. This is quite the most beautiful of this series.

MASQUE DE FER commenced to bloom on July 31; is a free branching stemmed variety, with light red flowers rather under medium size, shading off almost to white towards the throat, with deep carmine velvety blotches with a golden streak in the centre of each on the lower petals of the flower.

HENRI CONSCIENCE commenced to bloom on August 6; is a variety of more slender growth than the others, with flowers rather below the medium size, of a delicate shade of rose-pink with whitish throat and deep carmine blotches on the lower petals. A very pretty variety, closely resembling Deleuil's variety Zelig of last year.

The variety Stanley of last year again disappointed me by shooting so weakly that it had not sufficient strength to produce a bloom spike. I shall hope to see and describe it in 1885.

Although it will be evident to anyone reading these brief descriptions of the new varieties of this year that there are some beautiful and delicately marked flowers among them, yet I must candidly confess that as a lot I consider them quite inferior in beauty and size of flower to those sent out the previous year, none of them at all approaching in size or beauty the fine Victor Hugo or the novel beauty of shade of Obelisque. It will be seen by those referring to my notes about last year's varieties on page 429 of Volume XXIV. of THE GARDEN that owing doubtless to the unusually warm summer these plants commenced to bloom about a month earlier than they did last year, the first flower opening this year on July 13, whereas the first did not commence to bloom last year till August 11, having been planted in the first week of the previous November. I have saved a fair quantity of seed of these hybrids, a pinch of which I shall be happy to send to any reader of THE GARDEN who likes to send me a stamped envelope addressed to themselves to Belgrove, Queenstown, Co. Cork, Ireland.

W. E. GUMBLETON.

LITHOSPERMUM PROSTRATUM.

COMPLAINTS have recently been made in THE GARDEN as to the difficulty of transplanting, propagating, and establishing this beautiful hardy flower. From what I have seen of this plant I judged it to be of easy culture, but, like many other things, I suppose it grows with freedom where all the conditions are right and refuses to flourish where any of them are wanting. A little daughter of a friend of mine inserted some cuttings of it in her garden at the base of a Thuja hedge in sandy soil in a shady position; they nearly all struck, and soon grew into good plants. But it does sometimes happen that success attends a rough-and-ready way when the usual approved methods have failed. In this instance the cuttings were good strong shoots, having a considerable portion of mature wood attached to them, and I fancy that wood nearly ripened would make roots with more certainty than quite young shoots, which are liable to damp off. Last May a strong plant of this Lithospermum was rooted out of a "stumpery," where it was doing well, but was too much shaded to flower properly, and was planted on a piece of rather hard, poor soil where Pinks had been growing for years. Now, this plant had scarcely any roots, but was set so deeply in the fresh soil as to quite bury the long, hard stems. It was watered when planted, but was quite neglected afterwards, and the season being so hot and dry, the foliage withered and the plant looked dead. It was then watered, and, curiously enough, sprang at once into active life, and has now made a good specimen. Is it that this Lithospermum ought to be planted at a time of year when the soil and weather are warm, and that the failures which occur are caused by transplanting at a wrong time of year? Mr. Wood states that he suc-

ceeded best with its propagation when the cuttings were exposed to the full sun; it is therefore reasonable to suppose that a larger amount of warmth is in its case necessary to promote root action than most other things need. Had I any quantity of this plant to move, I would choose August or the latter end of May or June for so doing, and should fear little for the result. The finest specimens of *Lithospermum prostratum* I am acquainted with are growing on light sandy soil on a piece of ground sloping sharply to the south. They must get very dry in summer, but they evidently enjoy the place, looking very happy and covering themselves in their season with flowers of the loveliest blue. J. C.

THE CREEPING FORGET-ME-NOT. (*OMPHALODES VERNA*.)

THERE are many spots in every garden, shrubbery margin, and woodland in which this little gem of early spring could be induced to establish and naturalise itself; indeed, if not left a good deal to itself, it refuses to grow in the way it should do. It dislikes being meddled with when once it has got a foothold, and in no position does it thrive or look better than as a fringe to a walk margin in some shady spot, and it is all the better if there are a few blocks of sandstone or other hard material, among which its roots may ramble and derive therefrom coolness and moisture. It delights in a cool, moist, loamy soil. The accompanying little sketch shows a luxuriant patch in flower in early spring, with an abundance of its lovely turquoise-blue blossoms nestling midst the foliage. There is a so-called white variety of this plant, but the majority would doubtless prefer the original. As in the case of the white Forget-me-not, the flowers lose half their charms if not true blue.



An edging of creeping Forget-me-not (*Omphalodes verna*).

THE CARNATION AND PICOTEE.

OCTOBER is a busy month for those who grow a good collection of these plants. I began on the 29th of September to repot our whole collection. They are nearly all grown in pots; consequently they were layered there, and now the layers are being repotted into small pots, one or two plants according to their size being put into large 3-inch pots. I find the young plants are well rooted this year. At the same time it is just as well to keep the lights close over the plants for a few days until the roots have taken firm hold of the new soil. They do best in frames, and if the pots are plunged in some light material close to the glass, so much the better. We use Cocoa-nut fibre refuse to plunge them in. There is a depth of it from 1 foot to 18 inches; it seems to yield a very gentle bottom heat for a few weeks, which is sufficient to give the plants a good start. I do not use rich soil to pot the young layers in. If good loam can be obtained, only add to it leaf-mould and decayed manure, giving a very small portion of the latter and some sharp river sand, as the loam is not likely to contain sufficient sand of itself. Drain the pots well and pot the plants rather firmly. Perhaps some people may think it unnecessary to go into such minute details as these; but the difference between failure and success, not only in growing Carnations, but things of more weighty importance, are determined by attention to little matters. Take, for instance, the disease in Carnations termed

GOUT, a swelling of the tissues of the stem close to, or it may be just under, the surface of the ground. How it is produced, or what way it can be cured, has not been determined. Portions of the decayed stems placed under a microscope may show the presence of insects or fungoid

growths, but that does not prove that the insects or the fungus were the cause of the swelling in the Carnation stem. The point I want to arrive at is this, that in our large collection of Carnations and Picotees I have never seen any trace of this derangement of the tissues of the plants, unless the plants had been received from someone else, and as a positive proof that the gout is not hereditary, the layers or pipings propagated from the gouty plants are almost invariably clean the following season. By what I have seen in collections where gout is prevalent, I believe a fertile cause of it is keeping the plants too dry at the roots during the winter. When a plant is badly attacked by this disease the only way is to take off the growths and propagate them as cuttings (pipings is the orthodox term); they will strike freely enough under a close bell or hand-glass. I do not claim any particular merit because our plants are exempt from this disease. I merely state it as a fact, and that our immunity from it is due to the treatment the plants receive I have no doubt. I am quite aware that plants out-of-doors are also injured in this way, but in the case of outdoor plants the stems not only swell, but also split open, caused probably by too much moisture followed by frosts. Referring again to our Carnations in pots, it will probably be found that aphides have begun to spread

upon the plants in the frames. We leave a smoke-hole in the front of the frame, and they are very speedily destroyed by fumigating them with Tobacco smoke. Wireworm is a very troublesome pest to the grower of Carnations in pots; its presence is frequent in the loam used for potting, and the only way to destroy it is to carefully pick the loam over on the potting bench before mixing it up with the leaf-mould, &c. My own experience also suggests that if it is intended to grow and flower the Carnations in beds or borders out-of-doors, the best way is to pot them up and winter them in cold frames. I am aware that some of the northern growers plant out their exhibition Carnations to stand over the winter out-of-doors in beds, but the plants require considerable attention to preserve them from injury. There are also a good many losses, and plants must be grown in pots to make them good, so that even on the score of the attention which they require labour is saved by keeping them in pots. We may now leave our Carnations safe in the frames for the winter, and say a few words respecting their near allies,

THE GARDEN PINKS. Some persons prefer the quiet beauty and delicate perfume of the Pinks to the more stately Carnation and Picotee. They are at least better adapted for small gardens, are much more hardy, and can be grown to perfection if there is not so much as a bell or hand-glass in the garden. The plants should now be of good size if they were, as they ought to have been, propagated in July. They like to be planted in beds of rich, deep, and light garden soil. October is the best month to plant them out in, and the plants may stand from 6 inches to 9 inches apart. I have planted them a foot apart, but that was for strong growing varieties and very large plants indeed. If convenience exists, it is just as well to pot up a few plants to make good any losses in the winter, but if planted out early enough to become established before the frosts set in, they do not receive much injury even during the most severe winters. The varieties usually grown to be forced into bloom early in the year are even more hardy

than the laced florists' varieties. The reason of this is not very far to seek; the florist does not look first at the habit or constitution of his seedling, but at the form, quality, and lacing of the flowers; habit and constitution come next. In the forcing section Mrs. Pettifer and Mrs. Moore would come laced if rightly managed, but when forced they lack the lacing and have merely a dark blotch in the centre. Lord Lyons is a charming variety of the old Anne Boleyn type; it is by far the best of them. The new self Rose Perfection, raised and exhibited by Messrs. Veitch, of Chelsea, will probably be as good a forcing kind, as it is well adapted for borders outside. Mrs. Sinkins I consider a coarse variety, and have never cared to grow it. Lady Blanche is by far the most refined and beautiful of the white varieties; it is, however, rather delicate in constitution. Single plants should now be large enough to be planted into 5-inch pots. If they are carefully potted in the Carnation soil named above and placed in cold frames, they will soon become established. J. DOUGLAS.

AURICULA COLONEL CHAMPNEYS.

THE differences of opinion amongst florists on this and other points are, it must be admitted, rather puzzling to those who have but little knowledge of florists' flowers. "Col. Champneys," says "Delta," who has been a grower of Auriculas for fifty years, "has not one good point to a florist's eye," and yet it was sent out by that veteran grower, Mr. Charles Turner, of Slough, with the highest recommendations. It received first-class certificates from the Royal Botanic and Royal Horticultural Societies, and also received the highest praise that could be given to new flowers in the gardening papers. It was raised from Chapman's Sophia, fertilised with pollen from Lightbody's Richard Headley. A coloured plate of it was given in the *Florist and Pomologist* in 1868, where it is styled "a remarkably fine Auricula, the truss of flowers large, bold, and attractive, indicating a free habit of growth and a robust constitution. There can be no doubt that this will become a standard variety, for it is not only very distinct, but one of the most attractive in the Slough collection." Thus it would appear that the Auricula in question was thought worthy of a better place than the "rubbish heap." May I also inform "Delta" that he writes rather too slightly about the class for fifty Auriculas when he says, "for fifty anything is admitted?" nor is Mr. Tymons quite correct when he states "that spectacular effect, not individual quality, is the thing chiefly sought."

As an exhibitor of fifty Auriculas for competition even before the National Society was inaugurated, I may say that plants for this class are selected in the first place for their quality; a large truss with many flowers is rejected for a small one with few flowers if the small one is superior in quality to the other. The plants are also arranged so as to produce the best effect, whether the numbers are twelve or fifty. I am not quite sure in what way "Delta" would define "anything" as applied to an Auricula; but a grower for fifty years cannot but be aware that "anythings" would be useless to take prizes with at an exhibition in these later days. Being a very free growing variety, Colonel Champneys has become very common, and it has certainly not the high quality of Geo. Lightbody, but it is as good as Chapman's Marie and better than Sophia, which I have discarded long ago. This variety, like many others, must be judged in its best form. I am sure both Mr. Tymons and "Delta" have seen Prince of Greens and John Simonite flower so badly, that their best friends could scarcely tolerate them, and yet these two are great favourites. Frank Simonite is the most recent of the Champneys type and the best of them, but it comes bad sometimes from a centre truss—starry in the ground colour and weak in the tube as Champneys ever was. We want improvements in these blue ground varieties, but we must put up with Marie, Col. Champneys, and Frank until we get better. "Delta," though a grower of Auriculas for fifty years, has not handed down to posterity

even one good *Auricula*. He may say, I have not had the means of doing so; but what means or opportunities either had Peter Campbell at Falkirk? The little garden behind his house is small enough, but it held a frame or two, and by means of some well-directed energy Campbell's name is handed down to posterity as the raiser of Pizarro, Lord Clyde, Lord Lorne, Duke of Argyll, Admiral Napier, and others. J. DOUGLAS.

MONTBRETIA POTTSI.

YOUR correspondent (p. 297) has doubtless treated this plant too liberally; a dressing every autumn of hotbed manure and three or four waterings during the summer with manure water, besides a sprinkling of guano, is what I should consider very high living, even if the soil itself is naturally poor. There may be some plants of a shrubby character and certain strong-growing herbaceous plants that might require such liberal feeding when growing in a position such as that described, but I know of no bulbous plant, except the *Hyanthid*, that would flower satisfactorily under such conditions. Too liberal treatment produces undue luxuriance of growth, which cannot under the circumstances get properly matured; hence a scarcity of flowers. This *Montbretia* is one of those plants which require a season of rest as well as of growth, although the resting season must not be pressed so far as to cause the leaves to wither to any serious extent. In this respect it is like many more bulbous plants of similar character; it should always retain its leaves; but nevertheless, as I have just stated, the plant requires a rest during winter, and also sufficient shelter to keep the leaves green. Indeed, I consider it necessary to take more care of the leaves during winter than the roots. I am not sure that frost would injure the latter if protected by a layer of dry leaves, but I know to my cost that cold winds and heavy rains injure the leaves, and that a poor crop of flowers is the result. For that reason I do not now risk our stock in the open ground all winter. Early in November with a fork we lift the clumps bodily and drop them as they come from the ground into large pots. We then give them the shelter of a cold pit, or that of an unheated house, until the middle of April, when they are hardened off and planted out again where they are to flower. If we desire to increase the stock, we at this time pull a clump or two to pieces, but the best and strongest flower-spikes are obtained from the largest plants. If your correspondent cannot afford the shelter of glass in winter, I should advise him to put it low down on a rockery in a sheltered corner, and under all circumstances to reduce the sumptuous living to which his plants have been so long subjected.—J. C. C.

—My experience with *Montbretia Pottsi* on the London clay is similar to that of Mr. Crook. I bought a few corms four years ago; they were expensive—about 2s. each. I tried them two years in pots and had one flower. Then I planted them out in a sunny situation where they have stood two (mild) winters. They have come up strong and healthy and increased rapidly, four bulbs having become a clump a square foot in area. About the time they ought to flower the leaves begin to turn brown, as do those of *Gladiolus* sometimes. The stems look as if they ought to flower, but do not. They have not been treated with stimulating soil, but with fresh loam and leaf mould as a top dressing; we may therefore say that two modes of treatment have been tried, Mr. Crook having used strong measures; the nature of his subsoil may have justified it, though, as a rule, this class of plants does not require rich ground. I am thinking of taking them up this autumn, drying them off, and trying them again in a large pot next year, putting them in about March in not too strong soil, and keeping them in the shade. I find the same difficulty with *Watsonias*; they come up well, but do not flower. All these Cape bulbs seem to require special treatment, which I as an amateur have not yet found out. Perhaps Mr. Ware or Mr. Fish would kindly give us some hints on the subject. Failures of this kind are very discouraging

to those who are not unwilling to try novelties which are necessarily at their first introduction rather expensive. I am glad Mr. Crook has opened up this matter, and I hope that we shall find some more successful grower of these bulbs than we are to advise and help us out of our difficulties.—A.

PROPAGATING HARDY WALL PLANTS.

THE stock of many hardy plants suitable for covering walls and other places can at this season be easily increased by means of cuttings inserted in sandy soil in a cold frame. When put in give them a good watering to firm them in the soil (a necessary matter), and keep the frame nearly closed until they are rooted, when more air will be required. Cuttings from 4 inches to 6 inches long made of half-ripened wood and taken off with a piece of heel attached to them make the best plants. If carefully chosen and properly treated no difficulty will be experienced in getting them to grow, and by April they will be well furnished with roots, and may then be planted in their permanent positions, or inserted on a west border in rows, using some well-rotted manure, where they can remain for a year or so to strengthen. When in their permanent places and growing freely they are much benefited by copious supplies of liquid manure at the roots, particularly when planted at the foot of brick walls, as some kinds of brick absorb a great quantity of moisture from the soil. Thorough drenchings with clean water applied with the garden engine over the foliage occasionally are beneficial as regards keeping down many sorts of insects which nestle under the leaves. The undermentioned are some of the plants which can be treated in this way, all of which are suitable subjects for the positions herein named.

Escallonia macrantha is a neat, dense-growing plant well suited for covering low walls, its rosy pink flowers, freely produced at the points of the shoots, contrasting well with the dark green foliage; if seed-pods are kept picked off, it will continue to grow and bloom all summer. *E. montevicensis* produces large panicles of white flowers freely during September and October, and by reason of its strong growth is well adapted for covering high walls or screens or wooden fences. This species requires a little more time to strike than *E. macrantha*. *Garrya elliptica* is another fast growing plant which is readily increased by cuttings; it grows freely, too, on a northern aspect; therefore its value cannot well be over estimated where large spaces on north walls have to be covered. Male plants of it produce their long graceful catkins ten and twelve on a shoot during the winter months, and on the females may this year be found clusters of berries. *Coronilla glauca* is another plant that strikes freely, and one that is useful for covering low walls in favoured aspects. A south exposure suits it best, where, during the autumn and winter months, it produces its bright yellow flowers in abundance. *Jasminum nudiflorum* and the common white, sweet scented *Jasmine* are both good plants for the same purpose, and easily grown from cuttings. *J. nudiflorum* does well on a north wall, where its bright yellow flowers are produced freely during the winter months.

The variegated *Honeysuckle* (*Lonicera aureo-reticulata*) is a useful wall plant, which grows fast when planted in good soil. It may either be tied in closely to the wall, or, if preferred, the long shoots may hang loose. Other kinds of *Honeysuckle* also answer well for covering walls or trellises. Their flowers, too, are useful in a cut state, and if growing near the windows of dwelling-houses their perfume is much appreciated. The variegated kind blooms freely all the summer, and it strikes freely from cuttings. *Kerria japonica* is likewise a useful wall plant, its bright orange rosette-like flowers being freely produced in spring, and again in autumn if the plants are pruned in a little after the first crop of blooms is over. Both the single and double varieties are plants of easy culture. *Ceanothus divaricatus* and *C. azureus* are amongst the best wall plants grown, their dark green leaves and light blue flowers forming a

grand contrast with their associates. They grow into large bushes in a short time if water be freely given them during the summer months. *Cotoneaster Simonsi* is well adapted for covering high walls either on a north or southern aspect; its red berries, too, which are freely produced, give it a very ornamental appearance. *C. microphylla* is more suitable for low walls, iron railings, mounds, or rockeries, its dense habit of growth rendering it a desirable plant for such purposes. It requires little or no training. *Berberis Darwini* is useful for hiding wooden or iron fences, or for covering any other bare places where close training is not desired; if planted in good soil, its bright orange blossoms are produced freely. *Exochorda grandiflora*, although deciduous, is well worth using for covering walls where great variety is required. Planted at the foot of a south wall, its pure white flowers are freely produced in long wreaths in May. On account of its manner of blooming it requires careful pruning. *Veronica Andersoni* and other New Zealand *Veronicas*, although generally grown as bush plants in shrubberies or in greenhouses, are well adapted for covering low walls; either on north or south aspects they bloom in profusion all the summer and autumn. Although they will stand a few degrees of frost, they are not what can be called hardy. In order to keep them safe through a severe winter they require protection, both roots and tops. Cuttings made of short side shoots strike freely in a gentle bottom-heat in spring. After being rooted they should be potted off and grown on in a little heat until good stiff plants are produced, which will soon be effected, as they grow quickly. They are much assisted by being freely watered at the root and overhead during summer.

The broad-leaved *Myrtle* is another plant which can be advantageously used on walls when planted where it can have the protection of a south wall; it grows freely, and its lovely white scented flowers are produced in abundance. When planted where it does not get the full benefit of the sun's rays it does not bloom nearly so well; the wood does not get sufficiently ripened; hence the advantage of placing it in a southern aspect. Cuttings of it strike freely. They should be slipped off with a heel and placed in a cold frame at this season, or cuttings may be inserted thickly in pots and plunged in a little bottom-heat in the spring. *Kuonymus japonicus aureo-variegatus* is a neat-growing evergreen plant, well suited for low walls; on a south wall its golden stems and variegated leaves are more highly coloured than when planted in less favourable positions. It is a free grower, and retains its foliage right down to the bottom for a very long time. Cuttings of it taken off now, placed in pots, and plunged in ashes in a cold frame for the winter, and then given a little bottom-heat in spring, soon make thrifty little plants. E. MOLYNEUX.

MANURE FOR HERBACEOUS PLANTS.

NOTWITHSTANDING the criticisms of "R. A. H. G." (p. 279), I maintain that the true test of any system of cultivation is results, and I am quite satisfied with what I have accomplished as regards herbaceous plants under the system of manuring which I have followed, and from which I have no intention of departing. Instead of making sufficient allowance for all kinds of soils and positions, "R. A. H. G." attempts to show that herbaceous plants do not exhaust the soil to the same extent as vegetables, and that the nutrient matter taken up by herbaceous plants is returned again to the soil. If such be the case, of what kind of matter is the refuse composed that is every year of necessity taken off herbaceous borders? Am I to understand that the soil is not exhausted when I clear off in autumn old stems of *Hollyhocks* 10 feet high? In our borders, such plants as *Delphiniums*, *Phloxes*, *Golden Rods*, *Helianthemums*, *Michaelmas Daisies*, *Dahlias*, *Sunflowers*, and many other plants grow to a height of 4 feet and 5 feet, and during a single year we remove cartloads of exhausted growth. Let me therefore ask in what way the matter that supported this growth is returned to the soil where no manure is

put on the borders. "R. A. H. G." says herbaceous plants increase to such an extent that he has to regularly take them up and divide them. In another place he says it is better to leave them alone than to expose them to the stabs and wrenches of the border fork. Is it possible, then, that forking in a little manure about the roots of a plant injures it more than taking it up and dividing it? If any reader of THE GARDEN is prepared to believe that, I am not; therefore no useful purpose will be served by discussing the subject further. J. C. C.

THE GIANT KNOTWEEDS.

THE two great Knotweeds (*Polygonum cuspidatum* and *P. sachalinense*) are capable of imparting much beauty in the way of grace and form to the open-air garden, particularly in autumn, when each of their tall and slender stems is profusely decorated with strings of tiny white flowers which remain attractive a considerable time. Of the two, *P. sachalinense* is much the larger and nobler plant, but the other, *P. cuspidatum*, or *P. Sieboldi*, as it is often called in gardens, is the most attractive when in bloom, on account of the flowers being quite white, while those of the other species are greenish. They are not plants for the border,



The Giant Knotweed (*Polygonum cuspidatum*).

both being of such spreading growth, and being gross feeders would soon overrun and harm plants of a weaker character. Their place is either on the lawn, in the shrubbery, or in woodlands, but in all cases in order to look well they must be placed so that they may have plenty of room in which to fully display their gracefully arching stems. An angle where walks bifurcate is a capital position for them, but in this case they must be planted sufficiently far away from the margin of either walk to give them ample space in which to grow. A quiet, retiring nook backed by shrubbery is also a good place for one of these giant Knotweeds; in short, there are many positions just suited to them in every garden of moderate extent. All the culture needed is to plant them well at first, giving them a fairly good soil of ample depth. Afterwards nothing is needed but to keep down superabundant suckers, which appear on all sides of the plants when they have grown to a large size. Sometimes it is advisable to give a little protection to the tender shoots in spring when only a few inches high in order to shelter them from severe late frosts.

Tulipa Gesneriana.—This is a fine showy border Tulip, especially when seen against a green background. It is a taller grower than the ordinary Tulip, and wants a sheltered position to prevent it from being broken by wind. It blooms in May, from six to ten bulbs in a clump making a grand show. It should not be forgotten at planting time next month.—J. CROOK, *Farnborough*.

NOTES ON AURICULAS.

SEEDLINGS that have flowered and are being propagated are very interesting as the young plants develop themselves. Established specimens do not require much attention, but the outer leaves are decaying, and as they become yellow they must be removed. Water may lodge in the centre of the choicest specimen, and if decay sets in the plant is doomed to destruction. Owing to the weather being dry, the plants have had plenty of air. It has been possible to keep the lights removed night and day continuously for weeks, and this has caused the plants to assume a more dwarf, compact habit than usual, and has also prevented that troublesome pest, green fly, from doing much mischief. The plants, however, have not been quite free from it, and it has been destroyed by fumigating the frames or by brushing it off with a soft brush charged with Tobacco powder. Auriculas do not require large supplies of water at any time, but they must be watered with very great caution now; they will not need it more than twice a week. Under the best of management it will not be possible to prevent some of the plants throwing up autumn trusses, but giving them too much water sadly aggravates the evil. It is astonishing how rapidly young plants grow into flowering specimens if potted on as they require it and receive the right treatment as regards watering, &c. Offsets taken off in spring of one year will form good exhibition specimens the year following. The main thing is to keep them clean and growing on to full development without any check. Then as to seedlings, the greater part of the interest of anticipating the Auricula bloom would be gone if there were no seedlings to flower for the first time. There must always be a good deal of uncertainty connected with the raising of seedlings, even when the very best varieties have been selected as seed and pollen bearers. "A thousand blanks for one prize," some might say, but the thousand are not blanks; they have beauties of their own, and many of them are as good as some of the old kinds, and if only one in a thousand is superior to them, it is a great gain, and the pleasure of seeing one's new seedling take the premium for the best flower at a show is surely well worth working for. J. DOUGLAS.

Caryopteris Mastacanthus.—This is likely to prove a useful hardy flowering shrub, as it blooms late in the autumn when flowers are becoming rare. In the bright blue of its freely-produced flowers it possesses a character that should win it popularity. We owe the introduction of this plant to Messrs. Veitch, who obtained it from Japan, where it is said to grow plentifully in the cooler and more elevated regions of that country. So far it has proved hardy in this country. There is a plant of it now in flower under a south wall at Kew, but although the object in planting it in such a position appears to be to afford it shelter, I believe there is no question as to its hardiness, so far, at least, as the past two winters have served as a test. The leaves are opposite, toothed, and hoary, and when bruised emit a strong oily odour which is not disagreeable. The flowers are borne in axillary cymes all along the upper portions of the shoots, and are lavender-blue in colour. I recommend an extensive use of this plant for shrubby purposes. In the north it is possible that this plant will not prove happy under outdoor treatment, so that it may be well to grow some in pots through the winter, planting them out in the open on the approach of summer. *C. Mastacanthus* may be propagated from cuttings as freely as a *Verbena*. It is also a rapid grower, forming a shrub 2 feet high and as much through in one season.—B.

—This pretty, free, autumnal-blooming, *Verbenaceous*, blue-flowered shrub, sent out a year or two since as a new plant, and now one of the prettiest objects in my shrubbery, turns out to be only one of the many fine plants sent to the Royal Horticultural Society from China by Mr. Fortune some twenty years ago, and is figured by Lindley on the second plate of the thirty-second volume of his *Botanical Register* under the name of *Mastacanthus sinensis*.

It is said to have flowered in the gardens of the society for the first time in 1845. It was then treated as a cool greenhouse plant, but with me it has up to this proved perfectly hardy. It was first described by the botanist Loureiro under the name of *Barbula sinensis*, but this name having been applied to a genus of Mosses, that of *Mastacanthus* was substituted by Endlicher. Who is responsible for *Caryopteris* I do not know.—W. E. G.

INDOOR GARDEN.

EARLY FLOWERING CHRYSANTHEMUMS.

OPINIONS will doubtless differ as to whether early flowering Chrysanthemums are valuable or not. For my own part I do not care for them. At the same time, however, I am willing to admit that where the demand for flowers in the month of September is great, these Chrysanthemums may be made to fill a useful niche. If they do no other good they serve by comparison to demonstrate the superiority of the later blooming kinds. One point in their favour must not, however, be lost sight of, and that is, they can be had in good condition with very little trouble. To grow them in pots until one has become quite master of his business in the way of Chrysanthemum culture is a very disappointing undertaking, for if the cuttings are taken too early, or the roots confined for room, they will flower weeks before they are wanted, and in a very indifferent manner. The most satisfactory way, therefore, of dealing with them is to grow them without pots except while in flower. Our plants, which had been planted out in the open ground, were lifted and put into 7-inch and 8-inch pots at the end of August, at which time they were bristling with flower-buds and perfectly healthy, with leaves down to the ground. As soon as potted, they were shut up in a cold frame and shaded from bright sunshine until the roots had got sufficient hold of the soil to bear full exposure. In less than a fortnight the plants were well in flower, and as they had had plenty of room while growing, they were close and compact in growth, and, when potted, did not require a single stick or tie to support them. The first to flower was *Madame Desgrange*. This is a very useful variety. *Madame Jolivet* and *La Vierge* are also good white kinds. The best lilac coloured sorts are *Madame Bachoux*, *Anastasio*, and *Souvenir de M. Rampont*. Yellow and bronze varieties include *Gold Button*, *Bolide*, *Chromatella*, and *Golden Madame Domage*. These should be well hardened off about the first week in May; then divide the old plants, and put out strong pieces in good soil in the open. About the middle of June cut them over, even down to the hard wood, *i.e.*, if likely to flower too early. Growers in the north no doubt find this section of Chrysanthemums very useful, as they may be had in flower before severe frost is likely to occur to injure them in the open ground. J. C. C.

CARNATION SOUVENIR DE LA MALMAISON.

THIS fine variety is unusually well grown by Mr. Kirk, gardener to Mr. Dobree, at Byfleet. Some plants exhibited by him during the past summer at a local flower show bore blooms which were the very perfection of development, being very large, pure in colour, and well formed. As many appear to fail in growing this *Carnation* satisfactorily, I have thought that a brief description of the cultural details as practised by Mr. Kirk would be interesting to readers of THE GARDEN generally. As soon as the blooming time is over the plants are prepared for layering, which is accomplished by laying the pots on their sides, at the same time burying them, or nearly so, in the compost. By watering the soil well now and then around the pot, the roots are maintained in a sufficiently moist condition, and by laying them down in this way the operation of layering is facilitated, and there is no danger of breaking off or injuring any of the shoots, which, as this variety is tall in growth, is likely to happen by the usual method.

The place chosen for them is a spent hotbed, in the light soil of which they make roots freely, their production being, Mr. Kirk thinks, materially hastened by the latent warmth therein. By the middle or end of September the layers are ready for taking off; they are then put into small pots and wintered in a frame. Early in spring they are shifted into larger pots, a free, very gritty soil being used, and are placed at the foot of a Peach wall, where, by means of the glass coping and the canvas which protects the trees from frosts, they get as much protection as they need whilst enjoying an abundance of air and light. There is no doubt that the position has much to do with the development of the flower-stems, for although this Carnation is very impatient of coddling, it seems to require rather more warmth than most other kinds when making its growth. The foot of a sunny, sheltered wall would therefore seem to be just the place for it, a stout, free growth being encouraged, which has for result the production of flowers of great size and substance. When coming into bloom the plants are removed to a cool, airy greenhouse. J. C. B.

FORMS OF LILIUM AURATUM.

AMONG the vast numbers of this Lily that are imported every season, many different forms present themselves, though the best-marked types, such as *pictum* and *rubro-vittatum*, that at one time were of frequent occurrence among imported bulbs, are now met with much seldomer than formerly; on the other hand, a loose, thin type of flower, which often causes the name of the Golden-rayed Lily to appear somewhat of a misnomer, frequently crops up. For decorative purposes this last is not to be compared with a good form in which the flowers are large, the petals broad and distinctly rayed and spotted. A desirable kind for small pots is one with, as a rule, narrow-pointed leaves very thickly set on the stem and a compact cluster of small, but well-shaped and spotted flowers. This is much dwarfer in habit than most of the other forms of this Lily, a character which is generally maintained under different modes of culture, though, as a matter of course, treatment tends greatly to affect the height of the plant; for instance, when kept always under glass the flower-stem frequently runs up 4 feet or 5 feet, even though it be not a strong specimen. To keep our Lilies as dwarf as possible we plunge them in the open ground when the frosts are over and leave them there till the blooms are just on the point of expanding; they are then moved under glass, as if allowed to open out-of-doors a shower of rain will wash the pollen over the bloom and greatly mar its beauty—that is, when required for indoor decoration. An important consideration is never to allow this Lily to become too dry when growing in small pots. On the other hand, stagnant moisture around the roots is equally injurious, and therefore we are very particular in thoroughly draining the pots. Though such difference exists among the ordinary forms of *Lilium auratum*, it is, of course, among the recognised varieties that the more distinct are to be found. One of the finest is *platyphyllum*, introduced a few years ago, but since then disposed of in limited numbers at the London auction rooms. The foliage of this is so distinct, that it may at once be picked out, even when not in bloom, the leaves being much broader than those of the ordinary *auratum*; so much so, indeed, as to suggest its varietal name. The bloom, too, stands out from any of the others in size and massive appearance. The petals are very broad and wax-like, while the flowers are shallower than those of the common kind. The golden band and markings are in this variety well defined. In the variety *rubro-vittatum* the centre of each petal is striped with crimson instead of the usual golden band, but the best of this class is *cruentum*. This is marked like the preceding, but has a deep crimson band; it is still a scarce variety, but a very desirable one. A densely spotted kind, with sometimes a slight streak, is often met with under the name of *pictum*, and a showy flower it is; but being scarce, one with perhaps a few more spots than the ordinary kind is often substituted for it.

Virginale, a white flower slightly banded with yellow, is a scarce and distinct form of *auratum*.

ALPHA.

IMPATIENS SULTANI.

THIS Zanzibar Balsam proves to be a useful plant for many purposes, and what makes it still more valuable is the fact that it is easy to cultivate. It may be grown either as a specimen or in small pots, in both of which forms it flowers satisfactorily. For room decoration I know of no plant to surpass it; it retains as well as expands its flowers better than many plants used for that purpose. How it may answer in winter indoors I have yet to prove, but I have great hopes that it will continue to maintain its character. Plants of it may be raised either from seed or cuttings. Those who wish to commence its cultivation may be advised to defer sowing the seed until early in February, but then they must have the command of a brisk temperature, as in its early stages of growth it requires both heat and moisture. If seed can be sown at the time suggested in a temperature which ranges from 60° to 70°, large plants may be obtained by the end of the summer. In dealing with the seed it is necessary, owing to its minute size, to treat it carefully; it should be sown in a pan filled with fine sandy soil, well watered before sowing, and it should be very lightly covered with the same sort of compost. If it can be placed on bottom heat all the better, but where there is not this convenience let it have a shady corner in a warm house, and be there treated in every respect as a tender plant. When the plants get large enough to handle they should be put singly in 3-inch pots, using a compost consisting of three parts loam and one of leaf soil with some sand. The same kind of compost will do for future pottings. The plants will require the assistance of artificial heat up to the middle of May, when it must be decided for what purpose they are to be used. If portions of them are to be grown into specimens, they must still have a close warm house where atmospheric moisture is liberally given, and a temperature of from 75° to 85° maintained, accompanied by a moderate supply of air and a thin shade on the glass in bright weather. As the pots become full of roots, they will want shifting into larger ones, but an 8-inch pot will grow plants large enough for all ordinary purposes. I also find that this Balsam is very useful when grown in 5-inch and 6-inch pots for vases and other uses in the household. The plants commence to flower as soon as large enough, and continue on in that condition; in fact, they flower all the summer, and I feel sure they may be had in the same condition during winter if accommodated with a temperature a few degrees warmer than that of an ordinary greenhouse. Treated as a bedding plant, this Balsam has certainly not been a success. The hot sun scorches and takes most of the colour out of the flowers; but if in a warm, yet shaded, position, that would probably not happen. Those who cannot accommodate it with artificial heat should not sow seed of it before the middle of April. If sown then and treated kindly, thrifty little plants might be had by the month of August, which would continue to flower for some time. J. C. C.

PLANTS FOR FORCING.

It may seem early to be thinking of these, but to obtain good results they cannot after this be taken up and prepared too soon, for the longer the time that is allowed them to start afresh and make new roots, the stronger and better will the plants bloom. The first requiring attention are those that are tender, and among them the Callas or Richardias, as they are now called, soon feel the frost, and should be lifted at once, taking care when doing this to secure good balls, for though these may need reducing to get them into pots, the soil can be worked away without harming the roots. In potting, light, rich mould suits them best, and as soon as they are placed in this it is necessary to give a good heavy watering to wash it down and settle it, when the plants should be stood close under the shady side of a wall or in a

deep pit, where they can be syringed or sprinkled frequently overhead to keep them from flagging. Favoured in this way for a week or two, they will bear the full light and sun, and may then be transferred to the airy stage of a greenhouse or started at once. Lily of the Valley, so easy to force later on, is rather difficult to get in early, but a good deal of this is owing to potting the crowns up and starting them immediately afterwards, a practice which gives then no time to form new rootlets; whereas, if lifted and potted as soon as the leaves die down they have every chance of getting hold of the soil, and instead of coming blind, as is frequently the case, they send out strong spikes of bloom. This being so, clumps should be lifted at once, and a good plan, where much flower is required, is to keep the mass intact, and place it just as it is on a gentle hotbed in any warm pit or house, where every crown will start and give fine leaves and blossoms. Imported plants of Lily of the Valley are always good, and as they are now cheap it is best to start with them, and follow on with home-grown later in the season. Solomon's Seal, though not very showy, is very suitable for forcing; the beautiful green of its foliage is quite unrivalled, a circumstance which makes it of great value for cutting to intermix with flowers. The roots are strong and creeping, and when dug up may be separated and potted in light rich soil, when they should be stood in frames to be drawn from as required to keep up a supply. For a time this and other plants of a like deciduous herbaceous nature will force in any dark place where they can have moist heat, and do better under such treatment than when they get light. Arches, or such like positions under stages, will be found good places for them, and there they should be covered with Moss or Cocoa-nut fibre, either of which will keep the temperature and atmosphere more equable, and so favour the plants. Plantain Lilies (*Funkias*) are likewise well adapted for forcing, the variety *F. subcordata* being very free blooming, and all are valuable on account of their beautiful leaves, which, when the plants are grown under glass, are quite charming, some having them splendidly variegated, while others are of bold type, and enriched with a metallic hue on the surface. The finest in these respects is *F. Sieboldi*, which is very striking, and should be largely grown, both for pots and the embellishment of the borders. This and the others, if to be used indoors, ought now to be taken up and treated in the same way as the Solomon's Seal already referred to. *Dielytra spectabilis* is a lovely thing, and though so good outdoors, is much improved by being gently forced, as the slight heat and shelter make the foliage and pink pendent blossoms look more delicate, and cause the plants to grow more gracefully than they do when exposed to the cold. Early forcing, however, does not suit the *Dielytra*, and it should, therefore, be brought on very gradually, and not subjected to a high temperature at any time, as the succulent shoots under such influence will draw. S. D.

Lilliput Pelargoniums.—A year or two ago one of the nurserymen in Ghent sent out two dwarf double-flowered zonal Pelargoniums representing what he appropriately termed a Lilliput section. These were Archiduc Rodolphe and Princesse Stephanie, both quite dwarf, bright in colour, and very free flowering, and also remarkable for a low, close, compact habit of growth. Since then the following new varieties of the same section are announced as in course of distribution, viz., Souvenir de Louis van Houtte, flowers very double and of a beautiful rich carmine-rose colour, very dwarf, compact and free; Comte de Flandre, very full double flowers of a delicate rose colour, shaded with carmine, distinct and very good; Comtesse de Flandre, flowers large, trusses of moderate size and yet very freely produced, colour brilliant, rosy lilac; and Comte de Hainaut, flower fully double, forming nice trusses of a lively rosy purple colour, a little dwarfer than the preceding. These are all double flowered. One single variety comes into the batch, namely, Reine Marie Henriette, a kind which bears large

trusses of single flowers of a soft pink colour, and very pretty. As before stated, the distinguishing characteristics of these Lilliput Pelargoniums are their remarkable dwarfness of habit, the plants, when fully grown, rarely exceeding 6 inches in height. They are well adapted for culture in pots or for the margins of flower beds, for which purpose they are especially recommended. So many good things in the way of novelties have been received from the Continent of late years, that we may fairly conclude that these new dwarf forms will not belie the high character given them on the other side of the Channel.—R. D.

Shading for glasshouses.—I have seen several paragraphs recently in THE GARDEN as to the best shading for glasshouses, but I have not seen the material which I have now had in use for the past five seasons mentioned. It is the "Wilkesden Scrym," and is what it professes to be—"rot proof." It is 50 inches wide, and costs 1s. 6d. per yard run. I had it put on rollers, and although often rolled up when damp it appears none the worse for it so far. It is of a light green colour.—G. F.

Wallflowers in pots.—Now is a good time to take up plants of Wallflowers for growing in pots for conservatory or house decoration in February and March, when they are much appreciated for their sweet perfume and rich colour. If seed were sown on a border outside about the end of May or early in June, and the young plants transplanted when large enough, they will now be strong and furnished with several side-shoots. They should be lifted without shaking all the soil from their roots, and put in 6-inch pots in rich soil; they should then be placed in a cold frame, and kept close and syringed occasionally until established, when they may be set out-of-doors for a time, i.e., if the frame is required for other things. About the end of the month place them in a greenhouse, Peach house, or any cool house near the glass where they will get plenty of air to prevent them from being drawn. Early in January, if required early, some may be placed in a gentle heat. Keep them well supplied with water at the roots, and give them occasional doses of liquid manure. Thus grown, they prove useful, and will be much appreciated.—E. M. S.

The Frankincense tree.—There are several specimens of the tree which yields the resin used as incense now to be seen growing in the succulent house at Kew. It is somewhat remarkable that these specimens have been obtained by importing from India, where the Frankincense trees are cultivated, large portions of branches or rather stout cudgel-like pieces quite 3 inches in diameter and 3 feet long. These "cuttings" were covered both ends with sealing-wax to prevent them from bleeding to death, and on arriving at Kew they were found to have broken through the wax and to have formed a thick callus all round the outside of the wood. On planting them in sand they emitted roots and pushed forth shoots, and have since continued to grow very satisfactorily. A batch of seeds received at the same time germinated freely, but the plantlets are evidently unhappy under artificial treatment. The Frankincense tree is a species of *Boswellia* and grows to a height of about 15 feet. The stem is stout, and is covered with a thick, rather succulent bark, from incisions in which the resin is obtained. One of the species at Kew—namely, *B. Carteri*, is found in the intensely hot climate of Arabia and Eastern Tropical Africa, where it has been seen alive by very few European travellers. "Although Frankincense has been highly prized and well known from the earliest periods of history, it is only comparatively recently that any definite information has been obtained about the trees which produce it. During the flowering season the fragrance of the Frankincense tree is wonderfully powerful, and extends so far that the air is redolent with it, even at some distance from the coast, a fact familiar to navigators for centuries. The principal consumption of Frankincense at the present day is in the preparation of the incense used in the Roman Catholic and Greek churches." About 20,000 cwt.

of raw Frankincense is imported into this country annually from Bombay.—Q.

The Snake Gourds.—Many of the members of the Cucumber family are remarkable for the strange forms and rich colours assumed by their fruits when ripe, the *Lagenarias*, *Luffas*, *Benincasas*, *Ecballiums*, along with numerous forms of *Cucurbita* cultivated in gardens, being some of the best known examples. Besides these there are the species of *Trichosanthes*, or Snake Gourds, as they are called, because of the curiously close resemblance of their fruit when ripe to a snake. The best of these is what Lindley called the *Serpent Cucumber* (*T. colubrina*). In habit this plant resembles a common Cucumber; the flowers are white and beautifully fringed, and the fruit grows to a length of 6 feet, is twisted into a coil near what we may term the tail, and in the process of ripening the colour changes in stripes from green to yellow and white, finally assuming a deep orange hue. This plant we have seen in fine fruiting condition at Kew. The Snake Gourd (*T. anguina*) bears fruits about 3 feet in length, which when ripe are striped with green and white. *T. cucumerina* is shorter still in length of fruit, but is quite as brilliant in colour as the above mentioned. Being natives of the Tropics, these three species require to be treated as stove plants, and are always better when planted where they would have a little bottom-heat. Trained along a rafter in a moist, warm house, the effect made by their "snaky" looking fruit hanging in large numbers from the branches is novel and attractive. Seeds sown in the spring will produce plants which if properly treated ought to bear a good crop of fruit by the autumn. In the Water Lily house at Kew there are several of these ornamental Gourds bearing ripe fruit just now.—B.

FRUIT GARDEN.

JACOBS' STRAWBERRY APPLE.

ALLOW me to add a few words to what has been said respecting this new dessert Apple. I have had an opportunity of seeing it growing, and have tasted its fruits for these last seven years, and I have come to the conclusion that too much cannot be said as regards its excellence either as a dessert or exhibition Apple. I am fully persuaded that it will eventually find a place in every garden, and that it will rank amongst our very best dessert Apples. It is rare that we meet with an Apple with so many good qualities combined as this has. The first time it was staged at the Petworth Institute Exhibition it carried off the first prize, and since then it has won several first prizes, thus showing the high estimation in which it is held by different judges. Its first appearance more publicly was at South Kensington on the 12th of August last, when it contributed not a little to obtaining the first prize of £5 for a collection of fruit. It was staged again at the same place on the 26th of August, when it was, if possible, more admired than before. On this occasion it caught the eye of Mr. Bunyard, of Maidstone, who wrote to Mr. Jacobs for specimens of it, which were sent to him, and which he laid before the committee of the Royal Horticultural Society, who unanimously awarded them a first-class certificate. This explains why in some of the reports it was said to be a Kentish Apple. I have heard that Messrs. Bunyard would like this Apple to take the name of Lady Sudeley, but I think no Apple could be better named than it is both as regards colour and flavour. It begins to colour beautifully in the latter part of July, and in August it comes into use, some of the fruit ripening in the first week of that month and others lasting till the first week in October. It is a very prolific bearer; indeed, I have never known it to fail. Mr. Jacobs has two trees of it, one much larger than the other, although planted at the same time. The largest tree produces the finest fruit, which remains on the tree a fortnight later than that on the other. That on the smaller tree, however, ripens first and produces fruit of a deeper colour. This has caused some to think they are two distinct varieties, though the flavour

in both is the same. Both trees are handsome, the largest covering a space of 12 square feet, and although so heavily laden with fruit this year they are full of bloom buds for next season.

Petworth.

B. ARNOLD.

LARGE V. SMALL BUNCHES OF GRAPES.

WE are all liable to set an undue value on large bunches of Grapes, and when thinning out the crop it is difficult to make up one's mind to cut off the longest and most promising looking bunches and to reserve the medium sized ones; yet there is much to be said in favour of this, for in the case of Muscats and some other sorts of Grapes there can be little doubt that it is good policy to do so. The Muscat of Alexandria and Mrs. Pince's Black Muscat produce long, noble-looking bunches, but after trying the plan of selecting the shortest, or, failing enough of these, shortening the bunches considerably, I can confidently recommend the practice to any who find a difficulty in getting the berries uniform in size. Small, stoneless berries in a bunch detract from its merits, and a medium-sized one, perfect throughout its entire length, is sure to carry the palm either on the exhibition table or elsewhere. I lately saw a beautiful crop of perfectly finished bunches of Mrs. Pince's Black Muscat, the result of cutting off the longest bunches and artificially fertilising the remainder by drawing the hand gently down the bunches when in flower. After they were set and swelling sufficiently to discern which berries were taking the lead, they were thinned out severely, cutting out all the small stoneless fruit first, and then setting out the remainder at even distances apart. If they look thin after the operation it is surprising how soon they fill up, and by the time they are ripe each berry has sufficient space and no more. It is unnecessary to adopt this plan in the case of Black Hamburg, Foster's Seedling, or in that of kinds which set and swell off regularly; but even with these the longest, most promising bunches on the strongest leading shoots do not always make the best bunches, while those on the weakerside shoots produce short, compact bunches. Again, some kinds, like Lady Downes, produce great numbers of small, imperfectly set berries, and the beauty of the bunch depends a great deal on the way in which the scissors are used at thinning time. Once convinced of the superiority of medium-sized over excessively long bunches, the sooner the latter are taken off the better, in order that the energy of the Vines may be concentrated on perfecting the remainder. For general use an even crop of moderate sized bunches will be found to be most satisfactory. Exhibitors of Grapes always set a high value on a few monstrous bunches, but exhibiting is but a secondary consideration compared with the daily increasing use of Grapes as a dessert fruit.

J. G. H.

Apple Tom Putt.—Although this Apple may not be much known beyond the south-western counties, there is no doubt that it is a good and useful variety. It was, I believe, raised by a clergyman who set himself the task of obtaining an Apple that everybody would like, a task in which he has been successful, for few Apples are more popular or better known in the west than Tom Putt; certainly no Apple is so often asked for by the cook, which is sufficient evidence as to its utility. The fruit is above the medium size, bright red next the sun, and firm and white in the flesh. Many like it as a dessert fruit, but it should not be classed as a dessert Apple. The tree makes a handsome orchard standard with a close head, and it is a regular and free bearer. I have not seen it grown in any other form, but I do not doubt that it would make a handsome pyramid or bush tree. Its season of use extends from October to about the middle of January.—J. C. C.

Pitmaston Duchess Pear.—Seven Pears of this kind were gathered the other day from trees in pots growing in Miss Wrigley's orchard house at Windermere, which, when weighed, turned the scales at 8½ lbs. The weight of the largest was 27 ozs.—W. E.

NOTES FROM NEW ENGLAND.

White Agapanthus.—I have often wondered why THE GARDEN never hardly alluded to this charming variety of the well known and grand old blue Agapanthus, and the notice of it in a late number (p. 174) induces me to say a word or two about it. I first cultivated it some ten years ago, and two huge plants—one white and one blue—were particular pets and kept for especial decoration of a spot which I have since to pass every day. They were in 16-inch pots. In the winter they were stored away under the stage of one of the greenhouses, and every spring brought out into their allotted place. A year ago they were forgotten till very late, and came out with their foliage pretty well blanched. They soon, however, picked up, and I looked for the flower-stems, but none came. It at once occurred to me that they had no soil to grow in, the roots completely filling the pot, as they had not been repotted for four years, and I gave them a good dose of fertiliser, followed by plenty of water, with a saucer beneath the pot. In two weeks the flower-stems appeared as stout and strong as a shoot of grand Asparagus. As usual, when I have a good thing I like to increase it, and at the very first flowering of the white, I saved and planted the seeds, and for years I have had plenty of plants. I have grown hundreds of seedlings of the common blue, and I have saved one from the lot which I think a magnificent acquisition. The flowers are not only slightly larger than those of the type, but the umbel is simply enormous, containing no less than 130 florets—quite a foot in diameter. I consider these old-fashioned plants, and what I see you call the Scarborough Lily (Vallota), quite unsurpassed by any newly introduced plant—for the same purpose of summer decoration—of the last twenty years.

Variation transferable.—Your correspondent, Mr. Weir (p. 175), has opened up a new theory of vegetation. If I thought it probable that the *Lonicera aureo-reticulata* could transmit its variegation to a *Convolvulus* growing with it what a grand lot of variegated plants we should soon have. As Mr. Weir has tried the Ivies and succeeded, I wish he would try *Caladiums* and *Callas*, which are nearer related than *Honeysuckles* and *Convolvulus*, and give us a *Calla* with the beautiful foliage of *argyrætes*, or, perhaps, *Camellias* and *Lonicera* might join hands like the latter and *Convolvulus*. I really hope Mr. Weir will not stop with only what he has already accomplished. I have a row of *Ampelopsis Veitchii*, *Provence Roses*, *Akebia quinata*, *Aristolochia Sipho*, *Ampelopsis quinquefolia*, *Clematises*, and *Lonicera aureo-reticulata* completely covering a fence 8 feet high and 160 feet long, and so intertwined that you cannot see either any part of the fence or the branches or roots of the plants. They have been planted twelve years, never pruned, tied, or trained in any way, only cutting from the face a cartload of shoots, principally *Akebia*, which overruns all. Now, would it not be grand to find some day the great big leaves of the Dutchman's Pipe, so massive and ornamental, made still more so in the estimation of those who want nothing green to find the elegant reticulation of the *Honeysuckle*, which twines among its stems, all covered through and over the *Aristolochia*? I shall watch it carefully hereafter and tell you when I see the first variegated leaf.

Hybrid greenhouse Rhododendrons.—In the excellent *résumé* of hybrid Rhododendrons at p. 178 I was agreeably surprised to find an account of Mr. Davis's new (or old) hybrids, which your correspondent says are "more popular in the north than in the south, where they at present seem but little known." This set me to thinking why this should be so in a country the remotest part of which from the other is less than the distance from Boston to New York. It is now some six or eight years since I purchased of Mr. Davis his exquisite *Lady Sefton*, *Lady Skelmersdale*, *Countess of Derby*, *Mrs. James Mann*, and *Duchess of Sutherland*, and my plants are now 5 feet to 6 feet high. I have never seen anything to equal them for delicious odour, purity of colour,

size of flower, and free-blooming properties. How could the south fail to recognise such northern beauties?

Verbascum olympicum, with "its grand and beautiful foliage is worthy, indeed, of the gods whose seat the mountain was." The leaves, you say, are about "2 feet in length, of a beautifully soft texture and of a yellowish tint." Only yesterday morning before I received THE GARDEN I was looking at some plants of our common Mullein (*Verbascum Thapsus*) and admiring their superb foliage, thinking that there were few new plants equal to them. To-day after reading THE GARDEN I had the curiosity to measure two or three of these plants, which, with many more, sprang up on the site of an old greenhouse removed two years ago, with all the soil removed down to the gravel and clay at the time of building, forty-four years ago, to make a Grape border. The largest of these plants measures exactly 5 feet in diameter from the tips of the outer leaves. There are just thirty-four leaves, as regularly imbricated as an *Echeveria*. The largest is 28 inches long and 8 inches wide, a good deal whiter than *Centaurea candidissima*, and as thick and soft as the richest velvet; indeed, if you were to take any smooth leaf and coat it over with the softest eider down on both sides, you would have something like a Mullein leaf. Neither a *Rheum*, an *Acanthus*, nor a *Gunnera* equals it for effect or beauty. Hardy as an Oak, no sun too hot for it, flourishing on a gravel bank, it is worthy a prominent place in the garden. Of course, you know the Mullein is a biennial, flowering in July and scattering its seeds, which soon grow up to good-sized plants. You will find them of all sizes. One of these I measured was just beginning to throw up its gigantic flower-spike, while another one close by had just finished its last flowers. This I also measured; it was just 8 feet high, the central spike 4 feet long; this was full of ripe seeds, except about 6 inches at the top, where there were a few flower-buds yet unexpanded. I cut it off and have sent it to you to-day in three pieces, so that you can have plenty of seed to distribute among any of our old friends who would like to try it. It is evidently a roadside plant like the *Chicory*, liking the gravelly soil in which the roots freely revel and find moisture in the hard subsoil for its great stout roots. I have known it ever since I knew any plant, but it was growing where its large leaves, dripping with the morning dew, were soon coated with the dust of the road, and exceedingly dirty and ragged. I never appreciated it till now. Bigelow speaks of it in his "Botany of Boston" as a showy plant with handsome yellow flowers, and he evidently saw it somewhere in his rambles as I see it now, and can confirm his estimate of this wild garden plant.

The season.—Perhaps this is a threadbare subject, but I cannot help saying we have here around Boston never had such a favourable one. It has rained about every other day or night ever since May. There have been no hot days nor any cold nights. The average temperature of May was only 1° lower than 1883; vegetation has been luxuriant; fruits of all kinds were never more abundant. As I write the temperature at 8 a.m. is 80°, and at noon it was 90°. The markets are glutted with produce. Peaches have sold as low as 2s. a basket (a little over two pecks); Williams' Bon Chrétien Pear or Bartlett, as we call it, 8s. per bushel; Gravenstein Apples, 6s. per barrel; common Apples, 4s. per barrel; Tomatoes, 7d. a bushel; Water Melons 1s. and Musk Melons 5d. each; Cucumbers, worthless, and only fit for pickling; and other fruits and vegetables in the same proportion. My crop of Pears is enormous; I gathered 45 bushels of Doyenné Boussoch from three trees.

C. M. HOVEY.

Forget-me-nots in pots.—A few plants of *Forget-me-not* coming into bloom in February when blue flowers are scarce are well worth the little trouble required to have them in that condition. A good strain of *Myosotis disitiflora*, annually

grown from cuttings, makes the best plants. If the cuttings were put in a cold frame or under a handlight behind a north wall at the end of August, they would by this time be good bushy plants, when they should be potted in 3-inch or 4 inch pots and grown on in a cold frame for a time until they become established. They may then be removed to a greenhouse or any cool house in which they can have a position near the glass.—E. M. S.

GARDEN FLORA.

PLATE 461.

HYBRID COLUMBINES.*

THE *Aquilegias*, or *Columbines*, rank amongst the most beautiful of garden flowers, and when well grown and placed in suitable positions they add a charm to the hardy flower garden, in its way quite unique. The *Columbine* is a very old inhabitant of our gardens. In the "History of Plants," published by Gerard so early as 1598, *Aquilegia*



A colony of *Columbines* in the rock garden.

cœrulea and *A. rubra* are figured; Parkinson also figures five garden varieties, all of them double but one. The original wild form he does not allude to it as a native of Britain, but states that it is found in the woody mountains of Germany. The double forms described by Parkinson do not differ in any respect from those to be found in cottage gardens of the present day. The pure white single form of *A. vulgaris* is not mentioned, but it is one of the very best. The finest variety has large pure white flowers, produced abundantly, and being borne well above the pale green glaucous foliage, they have a charming effect. It comes true from seeds if not mixed up with other varieties. If given deep, rich, clayey loam, they will produce a succession of elegant flowers to cut from for two months.

I have not found the alpine species and varieties to be quite so hardy in the open ground as the varieties of *A. vulgaris*; indeed, I could not get such choice species as *A. alpina*, *A. cœrulea*,

* Drawn in Messrs. J. Veitch & Son's nursery, Chelsea June 27.



HYBRID COLUMBINES

and *A. glandulosa* to live in the light gravelly soil of our garden near London. They do not seem to suffer from cold, but frost and wet combined are too much for them in addition to the wet, muggy atmosphere with which we have to put up during the three winter months. The most beautiful of all the Columbines is, I think, the North American *A. cœrulea*, a much more elegant plant than *A. glandulosa*, and seedlings from it vary much in their delicate tints of blue. I have had it almost white. We grow it in pots, and it requires but little attention, merely the protection of glass lights in winter to keep it dry.

Another Rocky Mountain species, *A. chrysantha*, comes next in my estimation. It is one of the most vigorous and stately of the whole genus. I have had single plants of it with 150 flowers, most of them open at once. By crossing this with *A. cœrulea* some years ago I obtained the hybrid form, *A. cœrulea hybrida*. Seedlings obtained from the first cross varied but little from each other, and had blue petals with the yellow corolla of *A. chrysantha*, possessing at the same time its vigorous constitution.

The variety with red petals and large yellow corolla was raised by crossing *A. chrysantha* with *A. californica*. It had almost all the characteristics of *A. chrysantha*, except its colour; the petals were pale red instead of deep yellow. It has been stated by some that these *Aquilegias* are practically biennial. This is a mistake, as I still grow the original plants raised seven or eight years ago, and they flower well annually. They have been grown in pots, and protected in winter by glass lights. *A. glandulosa* I grow in pots, but it does not succeed so well as the others just named. It seems to suffer most from the attacks of red spider, which they all do more or less in hot summer weather.

A. SKINNERI is a distinct and very handsome species found in Guatemala; it is hardy at least in a sheltered border consisting of light soil. Grown in pots and placed in a cold frame, it flourished with great vigour; a strong plant in an 8-inch pot produced 100 blooms. The flowers are orange-scarlet and yellow.

A. ALPINA is a very pretty species; its finely cut leaves have a more graceful appearance than those of *A. glandulosa*, which its flowers resemble in form, but they are of a more decided purple colour. Its right position is on the shady side of a mass of limestone in the rock garden. It grows well year after year in our collection of pot plants. The true form of *A. pyrenaica* is a plant to be desiderated; we raised many fine varieties of it from seeds. Its large purple flowers, drooping and nodding on slender stems, are very effective amongst other plants in the greenhouse. We grow about 200 plants in pots of all the choice hybrids and species that are not altogether safe in borders, and in their way they have a charming effect during the months of May and June.

To grow *Aquilegias* well in pots a rather rich compost ought to be used. Take good Pelargonium soil and add to it a fourth part of turfy peat, and a compost will be formed that will grow them with great vigour. They do not require much attention; they are not placed in the greenhouse until the flowers open, and as soon as flowering time is over they are set out of doors again. In September they are turned out of their pots, and a large quantity of soil is shaken from the roots. The plants are then placed in pots of the same size as those they came out of, or perhaps a

size larger. They stand out of doors in an open, airy position until cold rains set in late in autumn, when they are placed in cold frames, and there they remain with the lights drawn off in fine weather until spring. When danger from severe frosts is over, the plants are placed out of doors. A whitish green fly attacks the leaves, but it is easily dislodged by means of the syringe. Red spider is troublesome in hot weather, but the syringe also keeps that pest in abeyance. The *Aquilegias* are so easily raised from seed, that it is not difficult to furnish all sorts of odd corners with large groups of them. Indeed, we had a group of 100 pot plants of *A. californica* plunged in Cocoanut fibre, and when they were in full flower out-of-doors they were very grand. A group of one distinct species must be kept by itself if seeds are to be saved from them, otherwise they will not come true. No genus of plants with which I am acquainted is more easily hybridised than this. If one species is crossed with another quite distinct, a plant intermediate between the two will be produced, and the progeny will be very much alike.

J. DOUGLAS.

RECENT PLANT PORTRAITS.

LONICERA MAACKI (Regel's *Gartenflora*, plate 1162).—A beautiful and most free-blooming Honeysuckle with comparatively large, pure white flowers, introduced by Herr Maximowicz from South Manchuria. It is also sometimes found in the northern region of the Japanese island Nippon.

MUTISIA BREVIFLORA, *MUTISIA VERSICOLOR* PHILIPPI, *HABRANTHUS PUNCTATUS* (Regel's *Gartenflora*, plate 1063).—The first named of the above trio (a single flower and foliage of each of which is figured on this plate) is the more conspicuous flowered and ornamental of the two, and has rather handsome flowers composed of eight rather broad petals of a deep shade of reddish brown, with a conspicuous bunch of pure white stamens subtended by long yellow anthers in centre of flower. The foliage is broad, of a light green, slightly toothed at the edge, and with a stout midrib terminating in the curious clinging tendrils usually found on the foliage of all this family. The second named is by far the more curious of the two, and appears to be a most singular plant with flowers of an altogether abnormal colouring unlike anything I have ever before seen, and composed of ten very narrow, strap-like petals of a dull orange-yellow ground colour, rather far apart one from the other, and each of them most curiously marked with two parallel deep brown cross-bars at equal distances from one another. In the centre is a large and conspicuous bunch of white stamens, yellow-tipped, as in first named variety. The foliage is also most curious and singular in appearance, being extremely narrow and strap-like, produced most irregularly up the stem, and each leaf ends in a curl or hook to attach itself to whatever it is climbing over. It is altogether a most singular plant. Both these plants are natives of Chili, and were introduced thence by Dr. Philippi. The third named is a pretty *Amaryllid* from the Cordilleras, with a single pure white flower beautifully spotted with rose colour, and issuing from a brace of calyx-like leaves on the top of a short flower-stem.

CLEMATIS FRANCOIS MOREL (*Revue Horticole* for October 1).—An extremely pretty variety of this charming and free-blooming family raised by M. F. Morel, of Lyons, and producing medium-sized flowers of a deep rosy purple shade of ground colour, with a broad, deep red band down the centre of each petal, making it the reddest *Clematis* known.

STAPHYLEA COLCHICA (*Revue de l'Horticulture Belge* for October).—An excellent and faithful portrait of this beautiful and most free blooming pure white-flowered shrub, which is a native of

Southern Russia. It was recently renamed by a North German firm *Hooibrenckia formosissima*, and sent out as a new plant to the deception and disappointment of many customers and lovers of flowering shrubs in general. It is perfectly hardy, but forces well for the decoration of the early greenhouse.

HÆMANTHUS KATHERINÆ (*Botanical Magazine*, plate 6778).—A fine double plate of this handsome deep red-flowered *Amaryllid*, which is a native of Natal, whence it was sent to Kew by Mr. W. B. Lyle, and flowered in May of this year.

CORYLOPSIS HIMALAYANA (*Botanical Magazine*, plate 6779).—This is a small shrub closely allied to the *Hamamelis*, or Witch Hazel. It is a native of the easternmost mountains of India, and produces before the foliage appears in the early spring pendulous panicles of greenish yellow flowers, which have a Primrose smell.

PYRUS (CYDONIA) MAULEI (*Botanical Magazine*, plate 6780).—This plate shows both the red flower and golden fruit of this handsome Japanese Pear introduced by Messrs. Maule, of Bristol, in 1874.

CHRYSANTHEMUM CINERARIEFOLIUM (*Botanical Magazine*, plate 6781).—This is a white-flowered very long-stemmed Daisy, which is a native of Dalmatia and yields the famous Dalmatian insecticide powder. It is also known under the various synonyms of *C. rigidum*, *C. Turra-num*, *Pyrethrum cinerariæfolium*, and *Matricaria bellidiflora*.

STREPTOCARPUS KIRKI (*Botanical Magazine*, plate 6782).—A very elegant species sent to Kew by Sir John Kirk from the hilly country of the coast opposite Zanzibar. The flowers are lilac, and are produced on very slender stems in thin open branching cymes. These flower-stems are borne on the top of a stout, erect, hairy, main stem of from 4 inches to 6 inches in height, which is garnished with medium-sized rounded entire leaves with red stems.

W. E. G.

ROSE GARDEN.

THE ROSE SEASON.

SELDOM has this been so short as this year; severe frosts in April followed by tropical heat and a drought almost unprecedented in its duration and intensity are not conditions favourable to the perfect development of the queen of flowers. The blooms, too, as a rule, lacked size as well as substance, except in the case of a few Teas that seemed to be the better in all ways in consequence of the heat and the drought; this was notably the case with *La Belle d'Or*, a Rose in fine form during the season of 1884. The effects of the heat and the drought on the autumnal bloom were still more remarkable. It was supposed that, after the drying and semi-scorching which the plants got, they would have made strong shoots favourable to an abundant autumnal harvest of blossom. Had the rains fallen earlier, this would have probably been so. But little or no rain came till the last week in August, nor did it fall in sufficient quantity till September to reach the roots of Roses. This was far too late to secure a good harvest of blossom, and Roses have been very scarce during the autumn. Here again the Teas have been exceptions and have grown and bloomed well. In fact, the season of 1884 may be called the Tea Rose one. Teas on walls and in the open now (October 6) are showing forests of buds. Unfortunately, the exceptionally heavy rains and occasional hail stones of unusual size in the first week of September ruined thousands of promising buds, the torrents of rain that fell in East Anglia on the 4th ult. proving most destructive, tarnishing and apparently half rotting whole hosts of promising buds. The hail here on the previous day was so large, that it not only ruined the Roses, but put Apples out of good keeping condition, and knocked down the Peaches, ripe and unripe, on walls in large numbers. And now, after a season of unexampled heat and drought, with the ther-

mometer frequently running up to 90° in the shade, and only 6 inches of rain in the first seven months of the year, we are already crying out "no more rain for our Roses"; for should a wet October come upon them, unseasonable growth will be forced forth, sappy and tender, fit food for severe weather. D. T. F.

THE MARECHAL NIEL ROSE.

THE tropical heat this autumn has told to good purpose on this fine Rose. It was one of the few that revelled in the semi-tropical heat without flinching, and now the Maréchal in all forms of plant, whether as dwarf or standard in the open or as a climber on walls, is showing quantities of buds and blossom. As usual, however, it is flowering most freely and the blooms are most perfect on standard Briers. This is a peculiarity of the Maréchal that I have frequently noticed, but not been able to explain. Of the fact itself there is no doubt. We had a good stock of old standards on the Brier until some recent winters finished them off, and while these lasted we were seldom without a good supply of Maréchal Niel Roses from August to December. Our young standard Maréchals are now exhibiting the same useful tendency of continuous blooming throughout the autumn. But dwarf plants on their own roots and climbers on walls are blooming better than usual this autumn. As a rule, in fact the Maréchal Niel on walls seldom blooms in the autumn, and this is one of those mysteries in Rose culture which I confess I have been quite unable to understand. Perhaps some of your readers might be able to throw some light on it. The difference is not a matter of character or length of stock, as might have been supposed, for several of our Maréchals on walls are on the Dog Rose, and in the case of one or two of them the stems are nearly as long as those that flower freely in the autumn in the open ground. It seems, however, probable that the length of the Brier stems and their exposed position combined are the causes of the free blooming of Maréchal Niel Roses in the open air. As a rule the growth on such plants is short and stunted compared to what it is on plants on walls, or even dwarfs on their own roots, or worked plants in the open air; hence instead of running into long shoots like fishing-rods, as this fine Rose so often does on walls, it breaks afresh into short shoots that seldom run more than a foot without terminating in a fine flower bud. This autumn, too, not only the Maréchal Niel, but most of the golden Roses are even more full of colour than usual. I have often seen larger, but seldom better, or more or higher coloured Maréchal Niels than we have been cutting all through this September. Even the plants on walls and some of those on roofs under glass have yielded us a good many flowers this autumn too, and this is probably owing to the extreme drought and heat of the past summer, which has yielded less wood, and that more highly matured than usual. D.

THE BRIERS.

THERE is something no canny, as they would say in Scotland, about a good many of the Briers this season. They seem to have thriven on the heat and the drought, and have grown all the stronger and the larger on account of their dual influence. This was hardly to be expected, and is almost exactly the opposite to their effects on the Roses; not a few of these have grown but little, and the major portion have grown rather weakly, but the Briers are giants, and they keep on and on growing as if they did not mean to stop till the frost forcibly arrests them. Since the recent rains they have also started afresh, which seems a pity, as not a few of them had made rods of 10 feet in length before any rain fell.

With all this growing force in full swing the Rosebuds at their base have had more than ordinary difficulty in remaining dormant. Hardened in many cases by the drought almost past growing condition, they have been powerfully affected

and abnormally excited by the unusually powerful flow of sap along their base. With every wish to keep them dormant, the major portion of the buds that took freely have broken into growth since the rains. Had this tendency been foreseen in time it might have been wiser to have stopped the Briers back to within a few eyes of the buds almost so soon as these had taken freely. Had this been done most of the Roses might have shoots of such strength and firmness by this time as to have given good promise of being well ripened before the winter. But dormant buds are more and more desiderated by rosarians; the mere fact of their dormancy enhances their charms for them. No one can certainly say what a dormant bud may bring forth; as a rule, the longer it remains dormant the finer the Rose it will bring forth, hence to a great extent their popularity. But, of course, there are exceptions, and not a few dormant buds become food for the proverbial worm, and others break into disappointing abortions. Still, dormant buds, with all their faults, are preferable to autumnal shoots; but if we must have these shoots, then the earlier and the stronger the better, to give them time to finish and mature their growth; hence the origin of the two systems of treating Briers—that of stopping as soon as the buds have fairly taken, and the not stopping the wildling shoot at all till the following spring. The first method insures the prompt breaking of the Rose bud into a robust shoot, with three months or so before it to ripen in. The second prevents, as a rule, the Rose bud becoming a shoot till the following spring. The last is the best practice in the ordinary run of seasons, though probably the first might have been the better method this season.

We shall soon have had enough rain to insure a fair—it cannot now be a full—autumnal harvest of Roses, and it is to be hoped that the plants will not be exposed to the risks involved in a wet autumn, with its difficulties and dangers of late growths, more likely to become food for frost than to yield flowers to the satisfaction of the rosarian. H. F.

REPLANTING ROSES.

THERE are few better methods of resuscitating old plants of Roses than that of replanting them in fresh soil early in the autumn. October and November are the best months in the whole year for these operations, and the growth of Perpetuals being mostly rather meagre this season, they may be safely transplanted rather earlier than usual. If they can be removed into fresh, sweet, maiden soil, so much the better; but if not, the ground may be heavily manured, trenched to a depth of a yard, carefully mixing the manure and the soil together as thoroughly as possible. In planting the Roses, care should be taken to vary the place of the plants as much as possible. In trenching the old Rose beds and borders, great care must be taken to pick out and remove every bit of root, as few things seem more distasteful to Roses than their own roots. Of course, too, in lifting the Roses all the best roots must be preserved intact, and every root likely to develop into a sucker should be cut close back to the root-stock. Others may be shortened, the whole being cut off sharp and clean. Another point towards ensuring success is to keep the Roses out of the ground as short a time as possible. In replanting on the same ground it is a good plan to make a bold, wide opening at one end and turn the whole soil over, replanting the Roses in the process. Where the plants are transferred to new quarters the latter should be prepared first, so that the plants may be planted as soon as lifted. Only those conversant with the rapid rooting of Roses in the early autumn can be impressed with the vital importance of immediate replanting. Root disturbance is one of the most powerful stimulants, and the formation of new roots and the process of reformation begin at once. Thus it comes to pass that the laying in of Rose plants by the heels involves a loss of force as well as of time. Hence probably it comes to pass that roots are less speedily formed after a second disturbance than after the first, and

so on after each successive disturbance. Immediate planting after lifting is one of the surest means of ensuring success, and Roses thus treated and planted with skill and sufficient care will flower as well the next season as if they had not been moved. Fresh soil should be given to the Roses if possible. The new and fine sorts seem to become soil sick much sooner than the older varieties; in fact, the cry of Rose-sick soils is a comparatively modern one. The old Roses used to grow and flower on the same spots in perpetuity. The modern varieties seem to exhaust or become soil-sick on the best soils in two or three years, and this in cases where the best soils and the highest culture have been provided. This is one of the greatest mysteries and most trying difficulties to modern rosarians. The problem may be stated thus: A vigorous start, magnificent blooms, gradual deterioration, little growth, disease, insect attacks, death—all crowded into the narrow limits of three or four years. At the first signs of deterioration lift and replant the Roses, and they may be kept in perfection for another term of two, three, or more years. Some Peach growers adopt most successfully the same course with their trees, and it is certain that frequent liftings and replantings, as well as skilful culture and liberal feeding, are essential to the production of perfect Roses in perpetuity. D. T. FISH.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 298.)

OLFERIA CERVINA.—This interesting species, when allowed space for full development, has a truly noble appearance equalled only by some of the strong-growing Polypods. The most distinctive character belonging to this plant is its fructification, which, though differently arranged, has a great resemblance to that of our common Royal Fern. It is very liable to variation, due to the different habitats whence it comes. It has been found in most of the West Indian Islands, Martinique, Jamaica, Guadeloupe, Dominica, as well as in Tropical America, Venezuela, South Brazil, and in shady woods on the Corcovado Mountains, New Grenada, &c. In all cases the sterile and fertile fronds are entirely dissimilar, the latter, as a rule, being of smaller dimensions than the barren ones. It is a free-growing plant of very easy culture, either in pots or planted out. It requires a somewhat rich soil composed of fibrous loam and peat in almost equal parts, with the addition of some sharp sand or small crocks to keep it porous, as it is one of those plants which delight in being kept constantly wet at the roots. Occasional syringings overhead during the summer months are also very beneficial to it, especially when deprived of fertile fronds, the barren ones being of such a leathery texture, that should the water remain on them for a short time, it could not be productive of bad results. It may safely be classed among plants bearing the popular appellation of flowering Ferns. It requires stove temperature. Its mode of growth is peculiar, resembling in many respects that of some kinds of Acrostichum.

Fronds from 4 feet to 6 feet in length, sterile ones when adult pinnate with large, very shortly petiolate and ovate pinnae of a coriaceous nature; when young quite simple, ovate-acuminate. The lateral pinnae, with very unequal sides, vary from 5 inches to 9 inches in length, and about 2½ inches in width; fertile fronds, though generally of small dimensions, sometimes as long as the barren ones and usually bipinnate; their pinnae quite as long as the barren ones, linear-lanceolate, acuminate; pinnules rarely over half an inch long, obtuse, slightly compressed and covered all over, even to their very apex, with numerous pedicelled capsules of a peculiarly light brown colour, forming a very striking contrast with the light pale green tint of the barren fronds. Both kinds borne on stout, terete stalks, scaly at the base and, as well as the rachis itself, conspicuously furrowed on the upper side.

ONOCLEA SENSIBILIS. Like the species of *Olferia* just described, this also of itself forms a genus, its mode of fructification being so peculiar, that in all known Ferns there is not another instance recorded of similar formation. It is undoubtedly one of the oldest, if not the very oldest, of exotic Ferns introduced into Europe. About

the year 1700 it was first imported from North America, where it is to this day found growing wild in wet meadows and thickets from New Brunswick to Saskatchewan, extending southwards through Kansas and Arkansas to Louisiana and eastward to Florida. It is, in fact, one of the commonest of all North American Ferns, often occupying large patches of land to the partial exclusion of other plants. Though this highly interesting plant is not found in Western America nor Europe, oddly enough, it frequently occurs in Japan and in Siberia. The main attraction belonging to this species lies in the pretty soft pale green colour of its lovely barren fronds, whose outline is triangular. The middle is winged, either from the very base or from the second pair of segments, the wing at the base being very narrow, but gradually widening towards the apex. The sterile fronds sometimes, especially when the plants are well established in a rockery, reach 18 inches in length, and as they are borne on stalks usually longer still, they attain altogether about 3 feet in height, a result never attained under pot culture. Their texture is herbaceous, their surface perfectly smooth, and their underside slightly glaucous. They do not last long when cut; even in water they shrivel up immediately, and the first autumn frosts always destroy them; late frosts in spring, too, often do the same. These remarks apply to barren fronds only, which are by far the most numerous and also the handsomest.



Onoclea sensibilis.

Fertile fronds are not very common, and so unlike the sterile ones, that no one unacquainted with the plant would suppose them related to each other. They stand about half as high as the barren ones, and are perfectly rigid and nearly black in colour. Another peculiarity is that they dry up in winter, but remain erect during the following summer, so that a fruiting plant often has fertile fronds standing of two years' growth. There exists also a variety called *obtusiloba*, which, however, is not a constant variation of the species; and another form described by Maximowicz from the Amoor region, which he named *interrupta*. In this the fertile fronds nearly equal the sterile in size, and have elongated pinnae with remote segments, a condition also sometimes seen in the North American species. It is a plant much better adapted for planting out in the cold or outdoor rockery than for pot culture, as its rhizomes creep widely below the surface of the soil, root freely, and fork out in all directions; therefore in cultivation it is often difficult to confine the plant to one spot. It is perfectly hardy in this country, and requires a good loamy soil.

Fronds dimorphous, borne on robust stalks flattened, discoloured, and very sparingly chafy at the base; upper part green, smooth, and naked, rounded at the back, and slightly furrowed in front. Barren fronds, which are much the strongest and most numerous, have from four to ten segments on each side; the lowest pair of them are rather more than half as long as the whole frond. Like the remaining ones, which go rapidly decreasing in size towards the apex, they are lanceolate or oblong-lanceolate, narrowed at the base, especially the lower ones, and rounded at the extremity, or sometimes sub-acute, minutely serrulate on

the edges, the larger ones either with sinuous margins or deeply sinuous and pinnatifid. Fertile fronds, which are sparingly produced, consist of from four to ten pairs of appressed fleshy or cartilaginous pinnae, which are divided into a double row of sub-globose, bead-like segments or pinnales, the whole looking like a small and narrow, but dense cluster of diminutive Grapes. Each pinnaule has its edges so much recurved, that the whole forms a sort of pouch apparently filled with sporangia.

ONCHIDIUM.—Up to the present time two species only belonging to this genus have been introduced to cultivation, both extremely elegant and possessing some useful qualities. Their fronds are so light and finely cut, and of so lovely a green, that they are specially well adapted for mixing with flowers, amongst which they look as graceful as some of the *Adiantums*, and they last fresh much longer. Although somewhat similar in general aspect, their habits are entirely distinct, a character which in this case cannot possibly be attributed to different habitats. While *O. auratum* produces its handsomely decompound fronds from a single crown, thus forming a sort of miniature *Pteris tremula* with finely cut fronds, *O. japonicum*, on the contrary, produces them from numerous underground rhizomes, making thick tufts of graceful and pleasingly coloured foliage, green on both sides; whereas that of the former species, when in a fertile state, is of a beautiful golden colour underneath, which gives it quite the appearance of a gold Fern. That colouring, however, is not, as in *Gymnogramma* and *Nothochloa*, due to the presence of powder; it is simply the indusium, which is of a bright, rich, golden hue, and gives the whole plant a lovely appearance. It is not in habit only that these two species differ, for the treatment which they require is also dissimilar; while *O. japonicum* will thrive well in a cool house, and, in fact, will not stand stove treatment, where it soon becomes attacked by thrips, *O. auratum* must have a stove, or at least an intermediate house all the year round. The same compost, however, suits them both, viz., a mixture of fibrous loam, peat, or leaf-mould, and silver sand in about equal proportions. Both should be potted softly, as they have a great aversion to hard soil at any time. Care must be taken also to ensure their fronds being kept dry at all seasons, as if allowed to get wet they soon turn of a darkish brown colour and begin to decay. *O. japonicum* is easily propagated either from spores, which germinate freely, or from division, but the same cannot be said of *O. auratum*, which no doubt would be equally popular if its propagation was more rapid; the fact of its forming single crowns only prevents it from being increased by division; therefore the only mode of dealing effectually with this handsome species is by means of seedlings, which come up freely enough, but which have a natural tendency to damp off just above ground when in a young state.

O. AURATUM.—This lovely stove Fern, a thoroughly evergreen species, is a native of the Malay Islands; it is also found wild on the Nilgiris, where it grows abundantly, and on the Paulghaut Mountains, where, however, it is not so plentiful. In this species the fertile and barren fronds are quite different, the former being much more finely divided than the latter, or, as it may be termed, decompoundly pinnatisect. It is usually distinguished at first sight by its very narrow segments. The upper part of both kinds of fronds is of a dark glossy green and very attractive. In potting or planting this species the utmost care should be taken to keep the crown well above the surface of the soil, which must be thoroughly well drained.

Fronds 20 inches to 30 inches long, ovate-lanceolate, acuminate in shape, of submembranaceous texture, and very compound, four or more times pinnatisect, with segments in the sterile portions all narrow, linear, subcuneate, short, and all pointing towards the outer part of the frond. All fertile segments, especially the terminal ones, are elongated, siliquiform, and mucronate. These fronds are borne on firm, round, green stalks, hispid, with a few narrow scales only at the base where they are of a light brown colour. The sort, which are linear elongated, occupy the whole back of the fertile segments and the golden coloured involucres quite meet at their edges.

O. JAPONICUM (lucidum).—This species, by far the commoner of the two, though perhaps not the handsomer, is much more useful than the pre-

ceding on account of its being of much freer growth and producing its fronds shorter, but in greater abundance. These, however, are of a semi-deciduous character, and although the species is essentially a cool one, coming as it does from Japan, Nepal, Simla, Khasya, &c., where it is generally found at an elevation of 6000 feet to 7500 feet, still if not kept in an intermediate house during the winter months it is apt to lose its foliage, in which case it usually starts up very strong in the spring.

Rhizome, creeping underground, from which rise some numerous stalks about 6 inches high, round and pale brown as well as the rachises. Fronds rarely exceeding 12 inches in length, ovate-acuminate and submembranaceous in texture, three or four times pinnatisect. Contrary to those of *O. auratum*, the segments in this species, either fertile or barren, are uniform, being all narrow, linear, a little tapering below, ultimate ones moderately long, all gradually acuminate. Sori oblong, short, occupying nearly the whole of the back of the segments.

PELL.EA.

KITCHEN GARDEN.

TRENCHING, DIGGING, AND MANURING.

Now is the time to think of the winter trenching and digging to be done, for the earlier in the autumn that all rough digging is done the better. The object is to turn the soil up to the weather in order to let the frost break it up, kill insects and larvæ, and ameliorate its condition generally; hence, the longer the turned-up soil lies exposed the better. The object of trenching, which should always be done in the autumn and winter if possible, is to deepen and enrich the soil. For this purpose it is turned up two or three spades deep, but usually two spades and a shovelling, loosening the hard bottom with a strong fork. Whether this much can be done with safety, however, depends on the nature of the subsoil. If the latter be bad or poor, like gravel or sand, not much good can be done by bringing it up to the surface. In one large new kitchen garden I am acquainted with the subsoil was poor and stony; the surface was, however, trenched as deep as it could be, but previously many hundreds of loads of surface sods were carted into the garden to be buried in the trenching and thereby deepen the soil. No good is done by bringing up poor or bad subsoils; the surface soil almost always partakes of the character of the subsoil, consisting as it usually does of the gatherings and washings from the original formation of the district, and if that be poor, stony, gravelly, or sandy, the surface soil cannot be enriched by bringing it up to the surface. The best plan on all such poor subsoils is to dig the surface 2 feet or 3 feet deep if anything in the nature of a moderately fertile soil can be found to that depth, but if not then it is best to dig no deeper than the soil does go, and to enrich the same by adding manure and good soil to the top. This is the only way a shallow soil lying on a really poor subsoil can be either deepened or enriched. It is different, however, where stiff loams or clay form the subsoil, and when they lie below an ordinary fertile surface soil. In trenching, these may be brought up and spread on the surface exposed to the winter frosts, which will break them up, and if manured and mixed with the better and lighter surface soil they will be very productive. Sometimes old kitchen garden soils lying upon clayey or stiff loamy subsoils, and which have never been deeply dug, are much benefited by deep trenching, because the heavier soil from the bottom is really what they need, and which when brought up exposed to the weather in winter, and dug in again on the surface, restores the land to its original basis. The time to deepen vegetable ground in this way is in the autumn or early winter, because the frost only, even if slight, can break it up thoroughly. I have seen the clods of pure clay reduced to the finest powder by April, in which condition it mixes freely with the top spit in digging or forking in spring. As regards trenching in manure—a common practice—I do not believe in it. Where I was once, vast quantities of rough stable manure were turned over to the gardens from very extensive

stables, and to get quit of it readily the gardener had it spread on the next quarter to be trenched in a ten-acre kitchen garden, and there it was buried without doing, as I used to think then and think now, much, if any, good. I was there long enough to see a good deal of the same ground trenched over again, for trenching is a periodical practice in all well-managed Scotch gardens, and what was the rank dressing of manure when it was turned up from the bottom? Only a thin seam of rotten mould that had contributed little or nothing to the production of crops. Since then I have never buried any manure more than one spit deep, unless it was very rough refuse like Pea or Potato haulm, &c., all of which is returned to the soil with us the same season. Trenching 2 feet or 3 feet deep I consider only needful at long intervals without manure, unless the ground has produced an exhausting crop and has to be planted again immediately, in which case I would, if time permitted, trench first and manure the top spit when planting or sowing. All rank manure must be well buried, but under any circumstances the nearer the manure is to the surface the better if it is not of a nature to be spread on the surface itself as a dressing. Hence, by following the rotation system of having one crop succeed another of a different description, and trenching at intervals, the best way is to dig all rank or fresh manure in one spit deep in autumn on any vacant ground, and fork over and crop in the spring or summer following. By that time the rankest stable or farm manure will be pretty well rotted, and is within ready reach of the roots of any crop as soon as it begins to grow.

When manure is not plentiful, then deep trenching must of necessity be resorted to; it is to a certain extent an equivalent for manure. Thus, if we remove say an exhausting crop of Cabbage or Peas from the ground, manure will be necessary for the crop following if the ground is only to be dug a single spit deep; but if no manure can be given, then double digging, or, still better, deep trenching must be practised, and the deeper the better if the soil be of good quality. This practice, however, means taking the strength out of the soil on both sides, and if continued will end in serious exhaustion very quickly. It is only excusable when the soil is in good heart. With periodical trenchings and double digging at times not so much manure is needed as some imagine to keep kitchen garden ground in good condition. Moderate dressings will answer if dug into the top spit, and after repeated applications of vegetable manure, such as stable litter, mould, and vegetable refuse, &c., a good dressing of lime alone will be sufficient for one year. The common practice of wheeling all the vegetable refuse out of the kitchen garden to the compost heap is a bad one; far better is it to dig it in where it lies or wheel it on to a quarter where it can be dug in. Such refuse represents the very essentials needed for other crops of the same kind, and by digging it in the green state we restore all, and sometimes more than all, that has been taken out of the soil. As is well known to gardeners, it is not advisable to manure ground for Winter Greens too freely, as it makes them ranker in the blade than is desirable from the cook's point of view. I have seen crops of Greens taken off the same ground for many years in succession without any manure being added, although all the old leaves and stocks were cleared away, and yet the crop was always good; in this case, however, the soil was heavy. With us Greens are planted between the Potato rows, where they are, of course, benefited by the manure given to the Potatoes; but the main crop of Curled Greens (a north border 100 yards in length) has not received any manure for years, except the old blades and stumps, which are pulled up and dug in annually with the top spit when they run to flower. This is all they get, and I cannot say there is the least deterioration in the crop, although Greens have succeeded Greens without trenching the whole of the time.

S. W.

Inodorous manures.—"D." seems to have missed the exceptions I made (p. 146) of inorganic

manures like salts, soda, soot, &c., which with others he mentioned last week as valuable inodorous manures. What I spoke of as not being of so much value if they did not smell were manures "composed of half decomposed vegetable or animal matters," and I would like "D." to mention one of these that is inodorous, and get the best for Potatoes or anything else. Why does he not tell us the name of the "best Potato manure that is absolutely inodorous, and yet will beat, in productiveness of crop, the most offensive of other patent manures"? Of course the most offensive manures can be rendered inodorous, but only by adding absorbents to them, that increase their cost and bulk without adding to their value. Most people would prefer good Peruvian guano in its native state than in an inodorous condition.—J. S. W.

Narcissus pallidus præcox.—There is some mistake evidently as regards the identity of this flower. The first notice which I have seen of it appeared in *THE GARDEN*, February 9 of this year. It was certificated by the Royal Horticultural Society on February 12, and was illustrated in "Veronica's" notes on March the 8th. In all three places it is described, and also in Barr's catalogue for this autumn, as the early pale straw-coloured Daffodil of Southern Europe, and known to Parkinson, and described by him at page 73 of his "Paradisus." In Regel's *Gartenflora* for July, plate 1156 (noticed in *THE GARDEN*, August 30, p. 181), this same Daffodil is spoken of as being a perfect bicolor. I have the plate now before me, and it is indeed a true bicolor Daffodil and a gem in its way; bulbs of the latter appear quite distinct in colour from Barr's form, being deep brown and very handsomely shaped. I know Mr. Barr's to be silver-skinned and quite different judging by bulb evidence. My supply came direct from Southern Europe, the home of Mr. Barr's also. I want Daffodil experts to settle this question, trifling though it be, between Dr. Regel and Mr. Barr, and shall be happy to send Mr. Barr a few bulbs for test if needful.—B. H., *Cork*.

WINTER-FLOWERING BEGONIAS.

A SELECTION of the best flowering kinds of the shrubby evergreen Begonias will, if properly managed, prove of good service, both as flowering plants for the conservatory and as a prolific source of useful flowers for cutting during the dull months of winter. The blaze of brilliant colours made by the now indispensable tuberous-rooted Begonias during the summer being past, we turn to the winter-flowering kinds to fill the vacancy left by the going to rest of their more gaudy brethren. Although not so brilliant in colours nor so large in the size of their blossoms as the tuberous-rooted kinds, yet there is much to admire in the large drooping bunches of white, rose, or scarlet flowers which are borne by the winter-blooming Begonias. In addition to the true species of shrubby habit from which many useful garden plants might be selected, we have the more or less popular hybrids, of which *B. ascotensis*, *B. Knowsleyana*, *B. Ingrami*, and *B. insignis* are familiar examples. Some of the numerous forms of *B. semperflorens* are also favoured, because of their free flowering and ornamental characters, and in the several recently distributed kinds, of which *B. Carrierei* is one, we have other useful plants for service in winter. Other good useful plants, such as *B. Lynchiana* (Roetzli), *B. Listeri*, and *B. socotrana*, have recently been added to the cultivated species of this genus. The following is a selection of the best kinds for growing as flowering plants for the winter:—

B. ASCOTENSIS.—A tall-growing, fleshy-leaved plant with large terminal drooping bunches of bright red flowers. A first-class autumn and winter-flowering kind. A seedling raised by Mr. J. Standish, nurseryman, Ascot.

B. CORALLINA.—A woody-stemmed species with leaves green above and purple below, and

flowers in long pendent racemes, bright coral-red, reminding one of *Berberidopsis corallina*. This species may be grown so as to flower either in winter or summer. We saw a plant of it at the Manchester exhibition where it was much admired.

B. CARRIEREI (see p. 325).—This is the result of a cross between *B. semperflorens* and *B. Schmidtii*. The flowers are nearly as large as those of *B. semperflorens*, pure white, and produced in abundance. It is a compact grower and flowers freely during the greater part of winter. *B. Smithi* and *B. Bruanti* are other names by which this plant is known. Under the last name it has been recommended as a bedding plant. Messrs. Cannell, of Swanley, have lately brought this fine sort into notice, and to them we are indebted for the annexed illustration. This variety received a first-class certificate last spring.

B. DIGSWELLIANA.—A hybrid raised from *B. odorata* crossed with *B. fuchsoides*. It is a short, robust grower, with medium-sized leaves, and flowers on long semi-erect racemes, very numerous, and pale pink in colour.

B. DIPETALA.—A thick succulent-stemmed plant with pale green white-spotted leaves and axillary drooping racemes of two-petalled, large pink flowers; most likely an annual, as it does not thrive if kept longer than a year. Should be raised from summer-sown seeds.

B. FUCHSIOIDES.—This may be included here, as it flowers not only in summer, but on through the autumn and winter if favourably situated. The tall handsome habit and the large branching pendent panicles of bright scarlet flowers which belong to this plant are too well known to be more than referred to here.

B. HERACLEIFOLIA.—A stemless species with long-stalked Heracleum-like leaves and very tall flower-scapes bearing a large bunch of pale rose-coloured flowers. In early spring this plant is a handsome object in the Begonia house at Kew.

B. INCARNATA.—A smooth red-stemmed plant, which is represented by several well-marked varieties. They are all large flowered, rose coloured, handsome, and useful for service in winter.

B. INGRAMI is hardly distinct from *B. Digswelliana*, being of the same parentage as that kind. It is a pretty flowered plant, and blooms freely in winter.

B. LINDLEYANA.—A fleshy, hairy-stemmed species, with rather large foliage and drooping panicles of white flowers.

B. LYNCHIANA.—This fine winter flowering Begonia was figured in *THE GARDEN*, August 25, 1883, under the name of *B. Roetzli*. The immense heads of bright scarlet blossoms borne in winter by this species are of great service both when cut and when allowed to remain on the plant. It is easily grown, and should become popular.

B. MACULATA, also known as *B. argyrostigma*, is a stout grower, with oblong green leaves marked with silvery spots. The flowers are coral-red, and are borne in large drooping panicles.

B. NATALENSIS.—A tuberous-rooted species which dies down in summer and should be started in heat in autumn. The soft green of its thin papery foliage habit and the numerous cymes of large pale rose flowers which it bears in winter are attractive and useful.

B. NITIDA.—Everyone knows this useful old plant, its large shining leaves, borne on stout fleshy stems, and its terminal and axillary panicles of large, rose-coloured, sweet scented flowers being frequently met with in conservatories during winter and spring.

B. POLYPETALA.—A singular and handsome species, which grows about a foot high, and bears hairy leaves and several terminal flowers of as many as ten petals, which are red, the whole flower having the appearance of a small single Dahlia.

B. SCHMIDTI.—A dark green-leaved plant of compact habit, bearing numerous small white flowers which are abundantly produced all over the plant, and form a pretty contrast with the foliage.

B. SEMPERFLORENS.—This is always in flower both winter and summer. By pinching out the flower-buds in the summer handsome specimen plants may be grown, and these in winter will flower freely. The flowers of the type are white, but there are also varieties of this which bear rose-coloured or pink and white flowers.

B. SOCOTRANA.—The pretty peltate-leaved plant about which so much has been said, both because of the delicate beauty of its bright red flowers and

posed, are deserving of favour for winter decoration.

With the exception of the tuberous-rooted and annual kinds, the whole of the above may be grown in a cool frame or even out-of-doors during summer. Cuttings put in early in the year soon strike root and start into growth. They should then be potted into 4-inch pots in light rich soil and when large enough again shifted into 8-inch pots. By plunging the pots in Cocoa-nut fibre or ashes the roots are kept sweet and cool. Water should be

warm house. When strong enough the plantlets may be potted on and grown as for *Achimenes*. This species is not capable of being satisfactorily cultivated out-of-doors nor in a cool house. Most of these plants ripen seeds every year, and by gathering and sowing these in spring a large supply of young plants may be obtained, which, in addition to the vigorous growth they make, are not unlikely to yield variety, or even a hybrid race, as the flowers are often fertilised by bees, &c., which fly from flower to flower, and so transfer the pollen from one kind to another. B.

SEASONABLE WORK.

FLOWER GARDEN.

THE weather must now be closely watched, as before the occurrence of frost anything likely to suffer from it should be protected. Already *Alternantheras* are beginning to feel the effects of the cold, but, with the exception of these, carpet beds are still looking well, and may, with shelter afforded at night, be preserved in fair condition for some time to come. Laurel branches, stuck in or laid lightly on them, form an excellent covering, but the best is that rendered by the use of mats or cloths, either of which, with a few sticks stuck in here and there to bear their weight, may be thrown over quickly and removed in the morning. Succulent plants, such as *Echeveria metallica*, and any others that are tender and slow to get up to any size, had better be lifted and repotted, and there are many plants besides with fine foliage which, if housed before being injured, may be made to render good service during the winter in large greenhouses or conservatories, where plants of such bold type are wanted. Among *Pelargoniums*, the first to feel the frost are the tricolors and variegated section generally, and, if wanted again, should be taken up at once, shortened back, and have the principal portion of the leaves stripped off, when they may be packed closely with their roots in earth in boxes or potted singly in small pots, and thus stored safely on any light, dry, airy shelf near the glass till spring. The green-leaved sorts are the next to require attention, and as year-old plants flower with more freedom than young ones, it is important that they be preserved, and if cut in hard it is surprising what a number may be wintered in a small space. In the mixed border, that grand herbaceous plant *Anemone japonica* is still gay, and holds its own in spite of the weather. The next things to come in are

THE *CHRYSANTHEMUMS*, which, as the buds are now prominent and opening, will be greatly benefited by a soaking or two of strong liquid manure. This is best administered by drawing up with a hoe a low ridge of soil around each, so as to form a basin-like receptacle, as then the roots get all without any waste. In cases in which it is thought desirable to fill up vacancies in borders it may easily be done by means of spare *Chrysanthemums*, which, being fibrous-rooted, may be lifted with large balls and replanted without much check. The best time to carry out the operation is during a dull, showery day, when, by watering heavily to wash in the soil, the leaves will continue fresh without any flagging. To support the stems a few weak sticks are all that is necessary, as the branches may be looped up and held secure with very little tying. Where

BULBOUS PLANTS, such as *Hyacinths*, *Tulips*, and *Crocuses*, are grown it is nearly time they were got in, in order that they may be enabled to form plenty of roots. If the soil of the beds in which they are to be planted is at all stiff it should be deeply dug or trenched, and during the process have plenty of leaf-mould and sand worked well into it to help the drainage. This is an important matter with bulbs, for should they lay wet in the ground, many will rot. To prevent this it is a good plan when planting to place a little sharp sand around each bulb. The proper distance for planting *Hyacinths* in beds to produce a good display is about 6 inches, and they should be placed at half that depth in the



Begonia Carrierei.

the curious nature of its stem and rootstock. It is a deciduous species, going to rest in spring to start again into growth in the early autumn.

B. SUAVEOLENS is closely related to *B. nitida*, from which it differs in having smaller flowers, which are pure white and powerfully fragrant. It is also known as *B. odorata*.

B. WELTONIENSIS.—An old garden favourite which was raised by Colonel Trevor Clarke from *B. Dregei* and *B. Sutherlandi*. Its graceful bunches of pink flowers, which are freely borne on the numerous branches of which the plant is com-

liberally supplied during the whole of the growing season, and a syringe overhead morning and evening in bright weather should also be given them. In September the plants should be removed into a frame or greenhouse, from whence they may be transferred to the warm conservatory or intermediate house in batches, so that a succession of bloom may be ensured. It is always better to start with young plants every year in preference to the old ones. *B. socotrana* forms a cluster of bulbils at the base of its stem, and these should be pricked into pans of light, sandy soil and started in a

ground. To show them off to the greatest advantage, circular beds raised in the centre are best, and to hide the bare soil a carpeting of *Meibomia gibraltaria*, or some of the dwarf spreading *Sedums*, forms a good setting. Tulips should be treated in the same way, as the fresh green helps to tone down and give fine effect to their gay colours. In borders Hyacinths and Tulips are the most telling in patches of three, which may be all of one kind or of distinct colours, according to taste, however arranged. They should be planted triangularly 6 inches or 7 inches apart, and at the same depth as in beds. As many bulbous and tuberous-rooted plants get lost during winter and spring through digging and re-arranging borders, the site of each should be marked, either by means of a label or iron peg, in order that workmen may see where they are.

CLEANING WALKS.—The weather has been such of late as to cause walks and roads on which there is little traffic to be full of weeds. Many break the gravel to destroy these, and incur much needless labour thereby, as well as discomfort from having the surface rough. Common salt, such as is sold to farmers for dressing land, and which may be obtained almost anywhere at about 25s. per ton, will eradicate them when put on regularly and carefully. The time to put it on when it is most effectual is during dry weather, when by dissolving gradually and soaking in about the roots of the weeds, they soon lose their hold and the sun scorches them up. The most economical way of applying salt is to dissolve it in a tub of water, and then pour the weak brine on through a fine-rosed pot so as to distribute it regularly; but however used, the thing to avoid is the injury apt to result to the edging if the salt or liquid is put on too close to it. In cases where Box is grown as an edging salt is dangerous, but the risk to Grass verges is infinitesimal, as the principal roots being above ground, they are very much out of the way of its influence. One great advantage in using salt for the eradication of weeds, besides the time and labour saved, is the brightening effect it has on the gravel, as by killing all mossy growth, destroying *conferva*, &c., it seems to cleanse it right through, besides which it makes it bind all the firmer. We have heard of vitriolic acid being used to kill weeds, and we know that it does so thoroughly on lawns, where a single drop in the crowns of a Plantain or Daisy will quickly burn them up. The worst, however, of the acid is that it is bad stuff to have anything to do with, for if not handled carefully it destroys any clothing it touches and blisters the hands. In kitchen gardens all walks should have dead edgings, as then they can be dealt with by means of salt, and always kept solid, bright, and clean at a very trifling cost.

PROPAGATING.

No time should now be lost in putting in such cuttings of stove or greenhouse plants as are to be increased, as if delayed longer it will be much better to wait till February. Cuttings of *Solanums* put in now, and potted off as soon as rooted, and placed in a light position, will make good plants to grow on for next season. Plants obtained in this way are from their floriferousness preferred to seedlings, besides which the cuttings may be selected from a few of the finest, and, if done carefully, may be so taken off as to in no way disfigure the plant. Store pots of seedling Ferns in their various stages of development will now require careful watching, as if allowed to form too dense a mass they are apt to fall a prey to damp, on the first appearance of which the young plants should be pricked off into other pots. Early in the year is the best time for sowing, the young Ferns being in a much better position to stand the winter than if sown later. Before sowing prepare some 6-inch pots by filling them to within 2 inches of the top with broken crocks, over which place a layer of fibrous peat, then fill up with soil consisting of equal parts peat and loam, with a slight admixture of sand, the whole being sifted through a sieve with $\frac{1}{2}$ -inch mesh and pressed moderately firm. Many sow on very rough soil,

but in that case some difficulty is experienced when it becomes necessary to prick them off; therefore fine soil will be found most suitable. The spores grow most readily on peat alone, but in that case they are liable to be overgrown by *conferva*, which on loam are not so troublesome. All things considered, a mixture of the two is perhaps best. After the pots are filled give them a good watering, or rather water them several times with a fine rose till they are thoroughly soaked; then sow the spores. A good plan is to take a frond in each Fern in which the spore cases are just commencing to open, and lay it in a piece of clean white paper a few days before it is wanted. The spores when ripe will fall out, and the paper being white they will be readily recognised. The sowing should be done apart from the fernery, as Fern spores are always floating in the atmosphere, and a mixture would be the result. To prevent this, care must be taken to thoroughly wipe the hands after each kind is sown, and no more pots should be brought forward at a time than are wanted for the one sort. Sprinkle the spores as lightly as possible on the wet surface of the soil, and place them in a close case, or a pane of glass may be laid on the top of the pot. They should then be kept always moist, and when water is needed it should be either sprinkled with a fine rose or the pots may be placed about half their depth in a pan of water which will percolate through the whole mass and give all a good soaking. This latter mode is to be preferred, as there is no danger of displacing the spores. It will be found as a rule that hardy Ferns do best in a greenhouse temperature, and temperate and stove kinds in that of a stove. In about a month the surface of the soil will be quite green with the growing spores. When that is the case they must be carefully watched, and if they commence to damp they must at once be pricked off, an operation which is best done in the following manner: Prepare some pots as for sowing, except that the soil should be put in them very lightly; then with a pointed stick take a mass about the size of the end of a lead pencil of the growing spores and place it on the surface of the soil; then press it lightly with the finger, and so continue till the pot is full, when it may be watered and returned to the case. They will require dividing and pricking off three or four times before they are ready for potting, and in that case large numbers of plants are obtained from a single pot. The above remarks regarding the season of sowing only apply to the evergreen kinds; the deciduous sorts should be sown when the spores are ripe, but the treatment required is the same in both cases. It is, however, not absolutely necessary to sow the spores as soon as they are ripe; many kinds will keep good for months and even years, but, on the other hand, some lose their vitality in a very short time. In the case of trees or shrubs that have been grafted, see that the grafts are not blown off, for even where the union is complete that part is weak for some time; therefore care must be taken that all are securely staked and tied, or in the event of storms the results may be disastrous.

INDOOR PLANTS.

FERNS.—Where there is a regular Fern house the atmosphere should at this time of the year be kept considerably drier than during the growing season, but sufficient water must be given to the roots, for Ferns above all plants cannot bear to have the material in which their roots are growing dry; where this occurs the fronds are sure to assume a sickly hue, out of which they rarely can be got until fresh healthy growth is made. One of the great mistakes committed in the cultivation of Ferns is giving them too much warmth; when so treated it has the effect of causing an undue extension of the fronds. The strong growers therefore get so large as to become unmanageable and smother the weaker ones, added to which it favours the increase of thrips and makes the plants much more susceptible of injury from fumigation or other means taken to destroy them too. The growth made in more heat than is necessary is of a character that will not stand

any length of time when cut. *Davallias* are very suitable for using in a cut state, and in the case of the deciduous kinds all the fronds can be so used after the season's growth is completed without material injury to the plants. Of all Ferns used for cutting none is such a general favourite as *Adiantum cuneatum*, but to have it in the best condition, so that it will stand without flagging in bouquets, button-holes, &c., it needs to be especially prepared. This is best effected by giving comparatively little root room, so that the pots get thoroughly filled with roots, keeping the plants as near the light as possible whilst growth is being made, with a considerable admission of air, and now letting them be as cool as they will bear. The fronds of all Ferns used for cutting will last much longer if severed from the plants and steeped completely overhead in water for a few hours before being used. Ferns that are planted out on rock-work and that are inclined to get too large may have this disposition checked a good deal by periodically cutting away as many of the older fronds, whilst still fresh and healthy, as appearance in the house will permit.

TREE FERNS.—*Dicksonias*, *Cyatheas*, *Alsophilas*, and similar species have a fine appearance when planted out, as they often are, in houses; but unless the structures in which they are grown are very large, it is a mistake to so treat them, for it much encourages the fronds to lengthen and the whole growth of the plants to increase so fast, that they not only overshadow everything near them, but soon get too large for the houses they occupy. By liberal feeding with manure water these plants may be grown quite large enough to show their natural habit in pots or tubs half the size generally used, and if in place of planting the pots are plunged, the appearance will be quite equal to planting out without the disadvantages, and, moreover, it gives an opportunity of altering the position of the plants at will. Where Tree Ferns are getting too tall for the houses, instead of discarding them, as is frequently done, they can be shortened. If large wire baskets are made open at one side, that they can be fixed round the stems, and these are filled with a mixture of *Sphagnum*, peat, and potsherds, or charcoal, and fastened to the stems at such heights as may be deemed desirable to shorten them to keeping the material moist, they will root into it sufficiently to admit of the trunks being sawn off immediately below the baskets. The present is a good time to commence with such plants, as they will at once begin rooting, and be much better established in it by next autumn than if the baskets were fixed on in spring. It requires a year to prepare them before they are cut off, without which the succeeding lot of fronds formed come small.

CYCLAMENS.—Young plants of these raised from seed some fourteen or fifteen months ago will now be pushing up their flowers; a temperature of 45° in the night suits them. With *Cyclamens* it is necessary to be always on the look-out for aphides. Where seed was sown about mid-summer the plants will shortly be ready for pricking out; they are best put in shallow pans filled with a mixture of peat and sand, or where very good yellow loam can be obtained in addition to the sand, a little leaf-mould may be used. Whatever soil is used, we have found it necessary that it should not be adhesive, otherwise the roots get broken when removed to pot singly. Keep the young stock in an intermediate temperature near the glass, so that it may have plenty of light.

FUCHSIAS.—Old plants should be dried off, then pruned, and stored away in their winter quarters. Young examples raised from cuttings struck towards the end of summer ought to be potted singly and set within a few inches of the glass in an intermediate temperature, so as to keep them growing slowly through the winter without being drawn.

BERRY-BEARING SOLANUMS AND AUCUBAS.—Where a good stock of *Solanums* is prepared they are for some purposes during the winter more useful than flowering plants. If a portion were propagated early and another lot struck in the spring, the latter will attain their colour to

succeed the former, and by this means a supply fully fit for use may be kept up from the present time until spring, as the late-struck plants will yet have their green berries. They are water-loving subjects, and whether grown through the season in pots or planted out and then repotted in autumn, the soil must be kept continuously moist, or the leaves become discoloured and the plants thin. Fumigate or dip into Tobacco water until the stock is completely free from aphides. The female forms of *Aucubas* grown in 6-inch or 8-inch pots standard fashion, with stems from 1 foot to 2 feet high, make excellent conservatory and room plants; where they have been well managed they will be now fully furnished with ripe berries, and may be employed along with greenhouse-flowering and fine-leaved subjects.

SARRACENIAS.—The mistake often committed with these is in growing them too hot and with insufficient light; an intermediate temperature is quite enough for any of the species or varieties. Even the different forms of *S. Drummondii*, which make growth in late autumn, are better kept now in a house where the night temperature is at 50° than in more heat. All the kinds, both species and varieties, require to be kept always moist at the roots, even in the winter time when at rest, but the different forms of *S. Drummondii*, through the fact of their being now growing, need especial attention in this matter. Thrips are the greatest enemies these plants have to contend with, and at this season, when there is necessarily less atmospheric moisture maintained, they usually are troublesome, getting under the recurved margins of the mouths of the pitchers. Sponging with Tobacco water or fumigating will kill them; the former is preferable provided the solution is not used too strong, so as to injure the pitchers, as it destroys both the live insects and their eggs. To those inclined to cultivate these interesting plants the names of the most desirable sorts may be an assistance. They are *S. Drummondii rubra*, *S. D. alba*, *S. flava*, *S. flava picta*, *S. purpurea*, *S. variegata*, *S. psittacina*, *S. Chelsoni*, *S. atrosanguinea*, and *S. rubra*. The flowers of the latter are as sweet-scented as the most fragrant Violets, which their odour is much like.

STOVE PALMS.—There is nothing gained, but rather the reverse, by allowing these plants so much pot room as they are frequently given, as it tends to their growing so rapidly as to get too large for the space available. Still, on the other hand, it is possible to err in the opposite extreme of insufficient root room; this applies more particularly to the large entire-leaved kinds, such as *Verschaffeltia splendida* and *Stevensonia grandifolia*, two distinct and handsome species for a large stove, and which, as they attain their full size of leaf, require good-sized pots, otherwise the foliage gets yellow and sickly in appearance. To this broad-leaved section, but much more compact, consequently not taking up so much room, belongs the yet scarce *Pritchardia grandis*, which may justly be set down as not only the finest dwarf Palm of the entire-leaved character, but one of the finest of the whole family. It is deserving of a place everywhere. Any specimens of the heat-requiring section of these plants that are suffering through insufficient root room may at once have larger pots. This, in all cases, is subject to their being kept through the winter in enough heat to induce regular root action, for if this cannot be secured it would be a mistake to move them. All Palms are not very particular as to the nature of the soil they are grown in, as most of the kinds will thrive in either peat or loam, light or heavy, but they seem to enjoy loam when it is of a heavy adhesive nature, provided the pots are well drained, but when grown in it, the dark colour in the leaves is not usually so apparent as when peat is used. Amongst the kinds of stove Palms that take up comparatively little room is *Chamædorea glaucophylla*, one of the most elegant kinds in cultivation. In habit it is like *Ptychosperma Alexandræ*, with a head of elegant drooping leaves surmounting a straight bare stem, but much thinner than the *Ptychosperma*. There are few, if any, species that can be

grown with such little pot room as this kind, but with this, as with all other Palms, it is well to give it manure in either a liquid or a solid state, otherwise the leaves often assume a sickly hue, especially in the autumn, and in the case of those that are much pot-bound. When in this condition, therefore, and there is any deficiency of heat to keep up through the winter free root action, manurial assistance in this way should be given. *Cocos Weddelliana*, now well known for its beautifully arched slender leaves, will bear a much lower temperature than is generally supposed; something above that of a warm greenhouse, say from 48° to 50° will keep it in condition equally well as where more heat is used, with the advantage of it not so soon outgrowing the space at command. Any of the more tender Palms, such as the *Geonomas*, *Dæmonorops*, *Chamædoreas*, and others of a like nature, that have been placed for the summer in conservatories where the temperature is insufficient to preserve them in health through the winter, should be at once moved to warmer quarters.

GREENHOUSE PALMS.—Where a large or medium-sized cool conservatory exists there are no better plants for permanent use than cool kinds of Palms, such as the *Kentias*, *Chamærops*, and *Coryphas*; the first-named of the above in particular are especially deserving of notice. *K. Belmoreana* and *K. australis* are handsome in all their stages of growth either in a small state or when more fully developed, their beautifully curved leaves being at all times effective. At no time are they more useful than through the late autumn and winter, when, associated with *Chrysanthemums*, *Camelias*, and such other flowering plants as may be in bloom, they produce a beautiful effect which few other forms are capable of. *Cordylina australis*, *Dasylirops*, variegated *Yuccas*, and *Aralias*, which are now often employed for standing out-of-doors on terraces, or for grouping amongst other things that give a tropical effect during the summer season, and for conservatory use in winter, should be taken in before cold nights come on, for although these things are not particularly tender, still they are better out of the reach of frost, and they can usually be grouped amongst flowering and other plants in the conservatory at this season.

FRUIT.

PINES.—If the final arrangement of the plants for the winter months remains incomplete, a single day should not be lost in getting the different sections together—fruiters and recent starters where they can have plenty of heat and light, and successions in light, well-ventilated pits where atmospheric moisture from the plunging beds is always present. If any of the beds require renovating, great watchfulness must be observed, as an excess of heat now the pots are full of roots might soon do serious injury. In all cases the tan or leaves should be well worked and fermented in an open shed, and where the mixing of the old and new together is likely to produce too much bottom-heat, the latter may be spread over the surface of the bed, and the general turn over may be deferred until January. Be careful in the application of water to the roots, but supply it freely when the plants actually require it. Keep them free from suckers until the plants become strong enough to throw up fruit, and then in the case of ordinary kinds allow one sucker to each fruiting plant. Scarce or shy kinds may carry two suckers, and when the fruit is cut divest the old stems of their leaves; lay them close together in shallow boxes filled with soil, and plunge in the strongest bottom-heat at command. Having done away with shading, give plants in all stages the benefit of the highest attainable temperature from sun-heat by shutting up at 1 p.m. Make but little difference in the mean until the fine weather breaks, and then be prepared with suitable coverings for placing over the glass by night.

VINES.—Where the first crop of Grapes is obtained from Vines in pots, the house in which they are to be grown should now be ready for placing them in position. Wash the young canes with soap and water, see that the drainage is right, and

top-dress with old turf and bone dust. If bottom-heat is to be applied to the roots, each pot should be elevated on a firm pedestal of bricks, so as to admit of the removal or renovation of fermenting material without disturbing the roots later on. Suspend the rods in a horizontal position over the fermenting material, start with a minimum temperature of 56°, and gradually increase it as the buds swell and show signs of breaking into growth. If the outside borders of early house have been thoroughly moistened by the autumn rains, and top-dressing has been finished, get them covered up with dry Fern or litter, and place lights or shutters over and well above it for the purpose of throwing off rain, which will now have a tendency to chill the surface roots. Encourage the formation of internal roots by the removal of every particle of inert soil, and replacing it with fresh turf and bones, resting on good drainage. With some internal drainage is considered unnecessary, but this is a great mistake, as a well managed inside border will take 3 feet of water in the course of the growing season, and the quicker it is carried off the more healthy will the roots be. Houses in which Hamburgs and other thin-skinned Grapes are hanging will require nice management to prevent the berries from damping. Look the bunches over twice a week, discontinue sweeping and raking; remove pot plants of all kinds, at least, if they require water, and keep the house dry, cool, and well ventilated. Where first-class autumn and early winter Grapes are in demand, Venn's Seedling should not be overlooked, as it sets, colours, and finishes well under Hamburg treatment, and keeps a long time after it is ripe. In a Hamburg house, from which we commenced cutting early in July, this delicious Grape is still hanging fresh and plump, never having lost a berry.

STRAWBERRIES IN POTS.—Although these plants will now require water less frequently, see that they have enough to keep the balls moist and to prevent them from shrinking away from the sides of the pots. The old system of drying off and stacking the plants in cones for the winter has been given up by the majority of growers, and the more rational mode of placing them in cold pits has taken its place; but here even they should be fully exposed to the elements by having the lights thrown off them every day when the weather is not wet or intensely severe. If plunged to the rims of the pots in Oak leaves or spent tan, free from worms, and regularly attended with water, they will retain their roots in a healthy state, and the foliage will be free from mildew and spider when they are taken in for forcing. Where cold pits are not available, Strawberry plants will winter well plunged in an open, but sheltered place in the kitchen garden with skeleton lights placed over them for supporting Fern or mats in very severe weather. Here the latest kinds may remain, giving very little trouble until they throw up flower-stems in the spring, and tender kinds like *British Queen* and *Sir Charles Napier* will be more vigorous than they would be after passing three or four of the darkest months in a close pit or before open ventilation in a cold arid house.

PEACHES.—Now that the Peach season is over, advantage must be taken of every fine day for renovating the borders in succession and late houses, as it is of no use trying to grow first-rate Peaches where the roots are in an unsatisfactory state. It unfortunately too often happens that the proper period for lifting, which extends from the gathering of the last fruit up to the fall of the leaf, is allowed to pass away before this important matter receives attention, and when this is the case, very few, if any, new roots are formed before the trees are again excited into growth. Another important matter which is sometimes overlooked during the quiet time in this department is the watering of inside borders; hence the advantage of having portable roof lights, which can be taken off for a few weeks after the wood is ripe to expose the foliage to the cleansing influence of dew and autumn rains, and to insure a complete and even soaking of every part of the border. If well

drained and properly made, an internal Peach border can hardly be over-watered in summer, and certainly it should never be allowed to get dry in winter, neither should the buds be exposed to an exciting temperature after the leaves fall; but the chief aim should be thorough ripeness by the application of warmth and complete rest by exposure to the elements. We should then hear less of failures from young beginners, and bud dropping would be no more prevalent than it now is where trees are well managed on open walls. Next to the management of a Peach tree comes the importance of getting exactly what we want to manage, as it unfortunately happens that great confusion and incorrect nomenclature very often lead to serious consequences both to the vendor and the buyer by late kinds being placed in the early house and early kinds in the latest. To avoid or reduce the chances of falling into this difficulty a visit to the nursery before the leaves fall should always precede the purchase of young trees, as many of the kinds can be determined by their foliage. One section is without glands; nearly all the varieties have large flowers, and the trees are more or less subject to mildew. The next section, including many of the best varieties, may be determined by the leaves having round glands, and the last by their assuming the kidney shape. Equally important is the selection of the stock, as all the varieties cannot be induced to succeed on any one particular kind.

KITCHEN GARDEN.

FROST may now be expected at any moment; therefore it behoves us to be on the safe side. Proceed at once to lift and lay in all autumn Broccoli; some break the leaves over the heart, but this is not sufficient protection; much the better plan is to lift the whole and lay the plants in thickly, having dry Fern at hand to throw over them whenever the frost sets in. Endive should also be lifted as it is required, say from three to four dozen weekly, placing it in the Mashroom house, plunged in any light soil, sprinkled over with powdered charcoal to prevent damping. Look over all newly planted Cabbage, and wage war against the Cabbage grub. Lettuces are sometimes preferred for salad to Endive; therefore lift them in quantities and protect them under glass frames. Keep up good supplies of Mustard and Cress by sowing thickly in boxes in heat. When up shift the boxes to a cool, airy vinery, where the plants will acquire the necessary colour. The seed should never be covered, but pressed down in the soil and sprinkled over with fine charcoal. Onions will now be mostly harvested; therefore the land can be at once utilised for Cabbages, Lettuces, &c. Dig and manure all vacant borders or quarters, laying the soil up roughly for the winter. There is nothing that sweetens all soils so well as frost, which appears to quite alter their character, making the stiffest of clays like a bed of ashes. Keep up the stock of French Beans, and sow Fulmer's Early in small pots for shifting on to succeed those just potted. There is no enemy like thrips for damaging French Beans; therefore syringe them in the morning with the following solution: Procure one shovelful of fresh lime and half that quantity of soot, put them into a tub, and pour in say one gallon of water; then take an old broom and well mix them together; then add 40 gallons of clean soft water. In twenty-four hours skim it, and the colour will be like that of bitter beer. By syringing with this every morning you will kill, or rather drive away, the thrips, and at the same time add to the health of the plants.

WORK DONE IN WEEK ENDING OCT. 8, 1884.

OCTOBER 2.

Dull weather, slight showers; cut verges and weeded the front of shrubbery clumps; planted a few bulbs, such as Crocuses, Narcissi, Hyacinths; also potted bulbs for forcing, placed them in a cold frame, and covered with Cocoa fibre; housed Azaleas and Camellias after washing the pots and clearing the surface soil of Moss and weeds. Thrips

has been troublesome on Azaleas, but now that the old leaves are all gone, and they have had a good washing with a strong lather of soft soap, they are probably settled, at any rate, for the present. A few pot Roses—principally Teas—have also been selected as an early batch for forcing, and these have been examined as to drainage, the old surface soil taken off, and replaced with good loam, a little bone dust being added as manure. No pruning has been done to the plants, except shortening back the weakest and dead shoots, and cutting away dead flowers and foliage. The plants will now be kept rather drier than usual for a month or so, and then be placed in the forcing pit. Roses in the open air have been made tidy by cutting off faded flowers. They are flowering well, though many are mildewed, which is more prevalent this season than for several years back, thus showing that dryness at root is the great predisposing cause. Where they can be given conveniently good supplies of water and syringing with soap-suds are excellent remedies and preventives also.

OCTOBER 3.

Windy and dry, just the weather for clearing the Asparagus plots, which we cut off with a rip-hook close to the soil; we do not like to pull the stems out, as any that are not quite ripe do not come away readily, and by pulling hard part of next season's crowns might come away with them. Surface hoed the ground to destroy weeds and self-sown seedlings, and as soon as these are dead a rich top-dressing will be given of manure and soil mixed. The latest planted Brussels Sprouts had the large under-leaves taken off to expose the stems and harden the Sprouts. The ground between them was also hoed. They are planted a yard apart each way, and yet they appear too close together, a fact that shows how robust the plants are, and so they ought to be, as they have the best ground in the garden, and it was deeply trenched and manured specially for them. Dwarf strains of Brussels Sprouts are to be avoided, as it is only from tall stems that a sufficiency of Sprouts can be obtained to adequately compensate for the liberal cultivation required. Put a few handlights over Strawberries that are ripening in the open garden for the double purpose of protecting from birds and hastening their ripening. The fruit is on plants that were forced in spring and were planted out at midsummer; the variety is Vicomtesse Héricart de Thury. We have still a few to plant; they would have been done long ago, but time to prepare the ground was wanting. Thinned out the last sown winter Spinach to 6 inches apart, and hoed the ground deeply. The earliest sown will be too forward, but we shall cripple it by picking it extra hard, and should it manifest any tendency to run to seed, it will be hoed up instantly. Housed the forwardest Chrysanthemums; they are put in our earliest vineries, which have been pruned and the houses cleaned. As we shall have to begin forcing about the middle of November, the plants will have to be moved to later vineries, by which time the Grapes in them will be cleared. This plan of shifting about plants entails a lot of extra labour and at no season of the year do we find it more perplexing than the present, when bedding and other plants that have stood out during the summer must have space, Grapes or no Grapes; but in our case we put the fruit first, and get over the difficulty by crowding the plants together, and postpone neatness of arrangement of them till the fruit is cut.

OCTOBER 4.

Much colder; minimum thermometer registered 34° this morning, so that there will soon be rapid fading of tender bedding plants, and we shall at once set about making arrangements for replacing the tender kinds, but having got stock plants of all the sorts, none in the beds will be moved till the frost has done its worst. Tuberous Begonias have done exceedingly well, and are wonderfully effective on a cushion of green or grey Sedum, with central plants of variegated Abutilon and Grevillea robusta. They are fine plants to take

the place of Pelargoniums, or rather to use a few of them instead of so many Pelargoniums; they flower quite as freely, and withstand rain much better than most kinds. Mowed flower garden plateau and clipped Grass verges and the raised edgings of *Herniaria* that are round all the beds, and which will not require cutting again this year. All the beds were picked over and made neat, the finishing touch being rolling of the walks. Indoors, being Saturday, the usual all-round cleaning up has been done, and plants in frames picked over, Grapes in bottles looked over and bad berries cut out, and the same has been done in respect of fruit still on the Vines. Figs are ripening wholesale, but as the foliage is fast fading, a large proportion of the fruits are but second-rate in flavour; hence from now the trees rather than the remainder of the fruits will be studied, by giving more air (the wood is quite ripe), and increasing it gradually till the house can be left entirely open, except in frosty weather. Gathered a few more Apples and Pears, arranged all that have been gathered, and tidied up the room. The ventilators are left open night and day, and will continue so to be till all the fruit has been housed and sweating is over.

OCTOBER 6.

Being still rather crowded, a few more of the shoots of Peaches and Nectarines on south and west walls that had not been nailed or tied in were cut away, and it will be all the better for the remainder; the foliage is unusually large this year, and the shoots look thicker than they really are. It is the same in the latest house, and a few more of the shoots have been taken off the trees there. As showing the extraordinary dryness of the season, we found it necessary to water the outside trees, as the soil was cracking in all directions, and next the wall it had come away sufficiently to admit one's hand into the opening; therefore whilst the hose was at work pounding up of these apertures was needed. Borders in the latest house were also well watered and the old mulching again spread over till such times as top-dressing can be done. The laterals in late house of Lady Downes, Muscat of Alexandria, and Alicante Vines still grow vigorously, and they have all again been stopped. The Grapes are quite ripe, and the houses are kept as cool as possible consistent with safety from condensation of moisture on the berries, so that growth can hardly be sufficient to necessitate a repetition of pinching, though if needed it will be done, as invariably such late new growth is attacked with mildew, and if it spreads no further it is bound to attack the berry stalks of the bunches, and, worse than that, it lays the foundation for an earlier spread of the parasite the following season. Turned over the leaves and litter that are to be used for renewing the heat in the fruiting and first succession Pine pits, and prepared soil for top-dressing the plants. The greater part of our hands have done nothing to-day but sweep up, and, unfortunately, the prospects for doing much else to-morrow are not of the brightest.

OCTOBER 7.

With the exception of such late varieties as Deux Ans, Northern Greening, and Court Pendu Plat, all our Apples have been gathered to-day, also a few more Pears. Ne Plus Meuris, Josephine de Malines, Bergamotte d'Esperen, Easter Beurré, and one or two other late kinds will be allowed to remain on the trees as long as they will hang. Bird and wasp-injured fruits that will not keep are being used for stewing, as the crop being so short we must make the most of the few there are. The only other outside work to-day has been the usual sweeping up on pleasure grounds and the firing of all that would burn at the rubbish heap, it being desirable to get such work done before rain comes and makes it more difficult. The ash from a fire containing so much vegetable matter is as valuable a manure as are many of the preparations of guano, &c., that can only be had at a dear rate. Perhaps it ought to be added that in addition to all the refuse from the kitchen garden and houses, the sweepings from under trees—sticks and leaves—and the trimmings

of hedges are all included in this general smother. Indoors we have been again busy preparing for winter, for although we hope not to have to disturb the flower beds for some time to come, there is such uncertainty about the matter, that space for the plants must be prepared. Chrysanthemums have all been housed to-day, and being, like so many others, affected with "Chrysanthemum fever," they really take up the space that ought to be reserved for other plants; overcrowding is, therefore, unavoidable till the Grapes are cut in other houses.

HANTS.

SOCIETIES.

CRYSTAL PALACE HARDY FRUIT SHOW.

OCTOBER 7 TO 11.

A GOOD show of hardy fruits was anticipated at the Crystal Palace this week, as the company had offered such liberal prizes. The show seemed to be even more satisfactory than was expected, for a finer display of Apples and Pears could not have been brought together, and it may fairly be regarded as one of the best that has been held here this season. It was not a very extensive show, as only about a dozen classes were scheduled, but some of these were represented by enormous collections in classes were no definite number was specified, so that the whole exhibition occupied a considerable area in the central transept of the palace. As far as the fruit was concerned, it might justly have been called an exhibition of the Kentish fruit growers, for some few of them carried off the chief bulk of the prizes. For instance, Mr. Roger Leigh's garden at Barham Court, Maidstone, contributed the chief prize collection; in fact, Mr. Haycock, the gardener, was unapproachable in every class he exhibited. The gardens at Hollenden Park, Tonbridge, and Preston Hall, Aylesford, likewise contributed the finest fruit in the show. The schedule was divided into two sections, one embracing open classes, the other classes restricted to amateurs. In the open classes the prizes were offered for the best exhibitions with no restriction as to the number of dishes to be shown, but as there were four prizes—viz., £10, £6, £4, £3, these were a sufficient inducement for even the largest and best known growers to compete.

APPLES.—Four collections of Apples were shown in the open class, each containing from 50 to 100 dishes of distinct sorts. The finest collection by far was that from Barham Court, which was without exception the finest that we ever remember seeing exhibited by Mr. Haycock, and it was the more remarkable having regard to the fact that the present is not a good Apple year. This collection contained upwards of 100 dishes, and there was not an inferior dish among them, some of the samples being exceptionally fine, and all representing the variety in perfection. To enumerate even those which were of unusual size and merit would make a long list, but we cannot refrain from mentioning that finer examples of the following sorts have rarely been seen. These were Cox's Orange Pippin, Northern Greening, Ribston Pippin, Warner's King, Cox's Pomona, Blenheim Orange, Reinette très Tardive, Alfriston, Peasgood's Nonsuch, and Small's Admirable. Every dish contained clean and even-sized fruits, and all indicated the thorough manner in which hardy fruit culture is carried out at Barham Court. The second best great collection was that from Messrs. Rivers, of the Sawbridgeworth Nurseries, who had also over a hundred dishes, the whole of excellent quality and some of superior excellence. Besides the ordinary kinds the collection contained many less common, such as Belle de Boskoop, Amasia, Guernsey Pippin, Jonathan, Roxburgh Pippin, Wadhurst Pippin, Lady Henniker, Flandres Pippin, Baron Ward, and many others, all of which exemplified the resources of this celebrated fruit tree nursery. The third best collection was that from Mr. Brassey's gardener, Mr. A. Waterman, Preston Hall, Aylesford. This also was a large collection, numbering some six dozen dishes, representing fruit of high quality. The

fourth collection came from the Earl of Harrington's garden, at Elvaston Castle, Mr. Goodacre having no fewer than a hundred dishes, some, particularly the culinary sorts, being uncommonly fine.

In the amateurs' class for two dozen distinct sorts of kitchen and dessert Apples Mr. Haycock was first with a grand collection; each dish represented the sort as fine as could well be. The following is a list of the sorts with which Mr. Haycock took the first prize:—

Blenheim Orange
Stone's Pippin
Lord Derby
Belle du Bois
Golden Noble
Mère de Ménage
Lord Suffield
Annie Elizabeth
Peasgood's Nonsuch
Reinette du Canada
Reinette Van Mons
Dumelow's Seedling

Melon Apple
Claygate Pearmain
Cox's Orange Pippin
King of the Pippins
Ribston Pippin
White Nonpareil
Golden Knob
Margil
Reinette du Caux
Adam's Pearmain
Mannington's Pearmain
Golden Nonpareil

Mr. Sydney Ford, of Leonardslee, Horsham, showed a grand collection also for the second prize, there being but few, if any, inferior dishes among the entire twenty-four; and Mr. Waterman's collection for the third prize was likewise good. The class for twelve dishes was represented by only three collections, the best being that from Hollenden Park, and the following is a list of the sorts Mr. Goldsmith showed:—

Blenheim Orange
Ribston Pippin
King of the Pippins
Cox's Orange Pippin
Fearn's Pippin
Golden Noble

Beauty of Kent
Hall Door
Warner's King
Reinette du Canada
Colonel Vaughan

PEARS.—The corresponding classes for the largest and best collection of Pears was represented by three exhibitors, who all had exceptionally fine collections, the best again being that from Mr. Haycock, of Barham Court. This collection numbered about six dozen dishes, each representing a different variety, and every one without exception being of high quality. The most noteworthy dishes consisted of Beurré Rance, M. de Treyve, Beurré Diel, Chaumontel, Conseiller de la Cour, General Todleben, Vicar of Winkfield, Louise Bonne of Jersey (very highly coloured), Glou Morceau, Bellissime d'Hiver, Uvedale's St. Germain, Beurré Bachelier, and Beurré Clairgeau. All these sorts were as fine as could possibly be, and those having a tendency to colour showed their true characters. Mr. Goldsmith's second best collection from Hollenden Park was but little inferior in point of quality taken as a whole, though it was not so numerous. His best dishes consisted of Brockworth Park, Doyenné du Comice, Beurré Hardy, Duchesse d'Angoulême, Seckle, Verulam, Thompson, Beurré Clairgeau, Beurré Superfin, Beurré Bosc, Glou Morceau, and Pitmaston Duchess.

Mr. Waterman with about fifty dishes took the third prize, his dish of Doyenné Boussoch being uncommonly fine. In the amateurs' class for twelve dishes of Pears there was an excellent competition, and such collections as were shown for the first two prizes would be hard to beat anywhere. Mr. Haycock was first with a picked dozen dishes from his large collection. The following are the sorts he showed:—

Conseiller de la Cour
Passe Crassane
Beurré Diel
Nouveau Poiteau
Easter Beurré
Pitmaston Duchess

Durandean
Beurré Hardy
Louise Bonne of Jersey
Beurré Superfin
Duchesse d'Angoulême
Beurré Bachelier

Mr. Goldsmith's selection included Brockworth Park, Pitmaston Duchess, Louise Bonne of Jersey, Doyenné du Comice, Marie Louise, Doyenné Boussoch, Beurré Hardy, Durandean, Beurré Superfin, and Conseiller de la Cour. There were four other collections of twelve dishes shown, the third being that from Gosfield Hall, also in Kent.

Vegetables.—Prizes amounting to £16 for the best exhibition of vegetables to be arranged for effect, but as in all cases where there is no definite number of dishes stated in the schedule, the competitors were few, there being but three collections, but these were highly

creditable to the exhibitors, Messrs. Waterman and Goodacre and Neighbour. The first-named had a collection of no fewer than 61 distinct kinds, all for the most part well grown and arranged effectively, and we imagine that every conceivable kind of vegetable was shown, not even excluding Maize. A capital collection of twelve dishes was shown by Lord Barrington's gardener (Mr. Meads) for the first of a series of six prizes offered by Messrs. Sutton, Reading, for the best collection of ten kinds. Finer Celery of Major Clarke's, red variety could not be desired, and equally fine were the Tomatoes President Garfield, Autumn Giant Cauliflower, Tender and True Cucumbers, Hollow Crowned Parsnips, white Globe Turnips, Veitch's Exhibition Sprouts, which Mr. Meads showed. Two other collections, from Mr. Waite and Mr. Osman, were shown for Messrs. Sutton's prizes. Classes were set apart in the schedule for the heaviest Mammoth Gourd, a collection of Pumpkins and Gourds, and a collection of ornamental Gourds. There was a fair exhibition of these, the curious shapes and colours of the ornamental Gourds being especially attractive to the public, and formed, moreover, quite an uncommon feature at the exhibition. The heaviest Mammoth Gourd weighed 80 lbs., and was sent by Mr. Sturges, Dr. Freshfield's gardener, at Mint House, Chipstead. Other Mammoth Gourds shown were not much less in size or weight; the best collection of Pumpkins and Gourds came from Mr. Osman, of Sutton, and Mr. Glen showed the best collection of ornamental Gourds. A capital collection of Gourds, all correctly named, was sent by Mr. Barron from the R. H. S. Gardens at Chiswick, and these had a special interest for the visitors, as it quite eclipsed all the others for extent and variety.

MISCELLANEOUS CLASS.—Among fruit exhibited not for competition was an extensive collection (numbering some 100 dishes) of Apples and Pears from Messrs. Cheal's nurseries at Lowfield, Crawley. The fruit for the most part was from the cordon trained trees, and very fair they were. A collection of some ninety dishes of Apples came from Messrs. Veitch, Chelsea, which included a selection of the finest sorts and one new one. The Sandringham certificated last year received another first-class certificate on this occasion. Messrs. Rivers showed a few sorts of new Peaches and Plums, and among vegetables Mr. Deverill, of Banbury, showed his new Onion Rousham Park Hero, which is undoubtedly a sort of the highest merit. The above were awarded extra prizes, as were also Mr. Butler and Mr. Langley for Pears.

INTERNATIONAL POTATO EXHIBITION.

THE great annual exhibition of Potatoes, held, as usual, at the Crystal Palace, was opened on Wednesday last by the Lord Mayor. It was generally expected that this year's show would not be so extensive or so fine as most of its predecessors, on account of the exceptionally dry season which we have experienced, which checked the growth of the tubers, though so favourable for keeping the disease in check. The majority of Potato growers who visited the exhibition were, however, agreeably surprised to find what was really a very fine display. Throughout the entire show there were very few inferior exhibits, and the prize-winning collections would certainly compare favourably with those that have been the finest in more favourable seasons. As regards numbers, there was a considerable falling off, though the exhibition comprised no fewer than 1300 dishes, exclusive of the extensive collections shown by non-competitors. In looking over the list of prize-winners, the names of several well-known Potato exhibitors were noticeably absent, among them being Messrs. Finlay, Gribble, Pickworth; but, on the other hand, several new names were conspicuous. The best Potatoes came from the midland and northern districts, and growers in the south, particularly on light soils, could not approach the prize-winners. Therefore, the names of several well-known southern growers were not prominent

in the prize list. By far the most successful exhibitor was Colonel Cartwright's gardener (Mr. Hughes), at Eydon Hall, Byfield, Notts. Mr. Hughes is a well-known grower of Potatoes, as well as a raiser of new varieties, and he has added considerably to his reputation in carrying off the first prizes for collections of twenty-four, eighteen, twelve, and nine dishes, besides many other minor prizes. Such success is unprecedented in the history of these Potato exhibitions, and it redounds to the credit of so young a grower. His dishes in every class he exhibited were simply perfection, not too large, of uniform size, and in the large collections a judicious selection of varieties. The tubers did not run large in the show, but were quite large enough, and certainly had a better appearance than coarsely-grown tubers.

The premier class in the schedule for two dozen varieties was admirably represented by no fewer than twelve collections. Mr. Hughes showed the finest collection, which was in every respect excellent. The selection of sorts was the following:—

Schoolmaster	Prizetaker
Prime Minister	American Purple
Woodstock Kidney	Blanchard
International	Vicar of Laleham
Favourite	Queen of the Valley
Reading Russet	First and Best
Lady Truscott	Cardinal
Snowdrop	Edgecote Purple
Myatt's Prolific	Red Emperor
Fidler's Success	Mr. Bresee
Adirondack	Early Regent
Excelsior	Beauty of Hebron

The other prize-winners, who also showed first-rate collections, were Mr. Ellington, West Row Gardens, Suffolk, second; Mr. Kerr, Dungavel, third; Mr. Allen, Ramsbury Manor, Hungerford, fourth; Mr. E. G. Wiles, Edgecote Park, Banbury, fifth; Mr. Pickworth, Loughborough, sixth.

Fourteen collections of eighteen kinds were shown, the finest being that from Mr. Hughes. The selection consisted of the following sorts:—

Mr. Bresee	Edgecote Seedling
Prizetaker	Reading Russet
Fidler's Prolific	Woodstock Beauty
Woodstock Kidney	The Dean
Fidler's Success	Cardinal
Schoolmaster	Edgecote Purple
Porter's Excelsior	Adirondack
Snowdrop	Early Regent
Red Emperor	Myatt's Prolific

The next best collection, shown by Mr. Charles Plott, gardener to Major Allfrey, Wakefield Park, Mortimer, was likewise excellent. In the class for twelve dishes, Mr. Hughes was again first with an excellent assortment. The list, including Prolific, Queen of the Valley, The Dean, Edgecote Purple, Schoolmaster, Snowdrop, Woodstock Kidney, Blanchard, Favourite, Reading Russet, and Excelsior. The second prize was taken by Mr. Ellington, the third by Mr. Pickworth, fourth by Mr. Lye, and fifth by Mr. West.

Once more Mr. J. Hughes showed the finest collection of nine sorts among fifteen, the selection being Blanchard, Prime Minister, The Dean, Woodstock Kidney, Porter's Excelsior, Snowdrop, Reading Russet, Schoolmaster, and Mr. Bresee; Mr. Tooley, of Banbury, was second with a very even collection, while Mr. R. Dean was third, Mr. W. Kerr fourth, and Mr. Ironside, Keith Hall, Aberdeenshire, fifth. The best set of six dishes was shown by Mr. R. Dean, who had fine examples of Mr. Bresee, Cosmopolitan, Vicar of Laleham, The Dean, Sunrise, and Snowflake; Mr. Hughes was second, Mr. Stanton third, Mr. Tooley fourth, and Mr. Allen fifth. Only exhibitors of four dishes competed, the most successful being Mr. Ellington, who had Iroquois, Vermont Champion, and Schoolmaster; Mr. Hughes was second, Mr. Kerr third, and Mr. Pickworth fourth. Among ten sets of three dishes of coloured rounds, Mr. Dean was first, with Matchless, Vicar of Laleham, Reading Russet; Mr. Wiles was second, Mr. Ellington third, and Mr. Hughes fourth. Among eight exhibitors of three dishes of white kidney sorts, Mr. Kerr was first with Pride of America, Early King Offa, and Myatt's Kidney, while Mr. Ellington was second, Mr. Creed third, and Mr. Bloxham fourth. The best three dishes of coloured kidney sorts came from

Mr. Hughes, who had Prizetaker, Mr. Bresee, and Edgecote Purple; Mr. Kerr taking second, Mr. Ellington third, and Mr. Wiles the fourth prize. The best dish of a white round sort among twenty-four was Schoolmaster, from Mr. Howard Bridge, Canterbury; second, Excelsior, from Mr. Lye; third, Donaldson's Victoria alba, from Mr. Ironside; fourth, Schoolmaster, from Mr. Scotchbrook, Whittlesea.

The class for one dish of any coloured kidney sort of English origin brought eighteen competitors. The best was shown by Mr. Sydney Ford, Leonardslee, Horsham, who had a fine dish of Prizetaker; Defiance, from Mr. Kerr, was second; Edgecote Purple, from Mr. Wiles, was third, while Lifeguard, from Mr. Ross, was fourth. Other sorts shown were Coswell's Red, Mr. Bresee, White Elephant (by four), Progress, Cardinal, Beauty of Hebron, and Prizetaker (by four). The class for one dish of any new white variety not in commerce previous to the present year. Out of seventeen the judges selected a fine dish of Chancellor, showed by the hon. secretary, Mr. P. McKinlay, Headley Lodge, Penge. This is a longish and flattish tuber of moderate size, and very even. The second was a fine dish of Welford Park from the raiser, Mr. Ross; third, Chancellor, from Mr. R. Dean; fourth, Fidler's Prolific, from Mr. J. Hughes. Other sorts shown in this class were Cliffe Hall, Garfield, Telephone, Northern Hero, Prime Minister. Ten dishes of a new red sort were shown, the best being The Dean, shown by Mr. R. Dean, and the same sort was also awarded the second and third prizes, shown by Mr. Hughes and Mr. Ross respectively, a proof of its excellence. Edgecote Purple, from Mr. Wiles, was fourth, and other sorts shown in this class were Cardinal, Progress, and Purple King. Among thirteen exhibitors of three dishes of white rounds Mr. Chopping, Sittingbourne, was first with Giant King, Early Household, and Reading Hero. Mr. Allen's second lot consisted of First and Best, Excelsior, and Schoolmaster; third, from Mr. Lye, Cliffe Hall, Excelsior and Schoolmaster; while Mr. Skarratt, with Reading Hero, Schoolmaster, and Early Regent, was fourth. Sixteen sets of three red rounds were shown, the best from Mr. Kirkland, Bletchington, being Vicar of Laleham, Reading Russet, and Adirondack; second, Mr. Lye, with Vicar of Laleham, Beauty of Kent, and Blanchard; third, Mr. Skarratt, Maidenhead, with Adirondack, Vicar of Laleham, and Reading Russet; fourth, Mr. Allen, with Vicar of Laleham, Harlequin, and Reading Russet. Among thirteen sets of three white kidney sorts, Mr. Skarratt was first with Cosmopolitan, Magnum Bonum, and International; Mr. Allen was second, with Edgecote Kidney, Snowdrop, and Woodstock; Mr. Chopping third, with Clarke's Main Crop, Improved White Rose, and Snowdrop; Mr. West fourth, with Cosmopolitan, Bresee's Prolific, and Lilywhite.

MESSRS. SUTTON'S PRIZES.—These were offered by Messrs. Sutton, of Reading, for four dishes of sorts put in commerce by them, for competition among amateurs and gentlemen's gardeners only. The first prize was taken by Mr. Hughes with excellent dishes of Reading Russet, Prizetaker, First and Best, and Woodstock Kidney; second, Mr. Osman Sutton, with Reading Hero, Early Regent, Fillbasket, Reading Russet; Mr. Allen third, with Reading Hero, Magnum Bonum, Woodstock Kidney, and Fillbasket; fourth, Mr. Lazzell, with First and Best, Magnum Bonum, Prizetaker, and Reading Russet. There were nine collections in all.

SEEDLING VARIETIES.—There was a good display of new and seedling varieties for the opinion of the judges, but only about half a dozen were awarded certificates of merit. These were named

MISS FOWLER, a flattish kidney sort, first named Aspirant. Shown and raised by Mr. Ross, Welford Park.

PRIDE OF EYDON, a white kidney, a seedling from Beauty of Hebron crossed by Myatt's Prolific. Shown by Mr. Hughes.

ELLINGTONIA, a coloured kidney, a cross between American Purple and Royal Ashleaf. Shown by Mr. Ellington.

J. ABBISS, a coloured kidney. Raised and shown by Mr. Fenn.

HARVESTER, a white round. Grown and exhibited by Mr. R. Dean, Ealing.

M.P., a white round, large, and of smooth form. Shown and exhibited by Mr. Ross.

MISCELLANEOUS.—Among the exhibits not for competition among the most extensive was that from Messrs. Sutton, of Reading, whose name is so well known in connection with our leading varieties of Potatoes. On their stand was displayed a collection numbering one hundred sorts of English and American Potatoes, including all the kinds most generally cultivated, prominent among which were to be seen well-grown specimens of Sutton's Magnum Bonum, Reading Hero, Reading Russet, Early Regent, Fiftyfold, and others of Messrs. Sutton's own introduction, while in addition to these we observed an entirely distinct collection of seedlings not yet sent out, comprising some thirty-seven dishes, and we understand several of these have proved, after careful testing, to be a great advance on the varieties already in commerce.

There were numerous other seedlings shown, but most of them were under numbers only. Those which obtained certificates have been thoroughly tested during the season at the Royal Horticultural Society's Gardens at Chiswick.

Messrs. Carter's collection on this occasion consisted of about a dozen heaps of new sorts which, shown in quantities, were good samples of the respective sorts. Among the sorts were Beauty of Hebron, Schoolmaster, Cosmopolitan, Ashtop Fluke, First Crop Ashleaf, Rivers' Royal Ashleaf and Early Ashleaf, and Cetewayo, the latter with flesh almost the colour of a Beetroot. Besides, a remarkable specimen of a Potato plant was shown called Carter's Champion Forcing Kidney crossed with Ashtop Fluke. The produce of this plant consisted of above 200 tiny tubers—such a quantity as has never before been seen on one plant.

Mr. Fidler, Potato grower, Friar Street, Reading, exhibited an extensive collection of the finest sorts, which numbered some 84 dishes, representing distinct kinds, besides heaps of White Elephant, Reading Hero, and Fidler's Improved Ashleaf. All this collection was grown under field culture, yet the tubers were of even size and of the highest quality.

Names of fruits.—*Peter Dawney*.—1, Kerry Pippin; 2, Golden Knob; 3, Manks Collin; 4, Golden Pippin; 5, G. W. E.—1, Court Pendu Plat; 2, Stirling Castle; 3, M. D. C.—Apple not known; Pear too much decayed. —*K. R.*—1, Wellington; 3, Farn's Pippin; 4, Court Pendu Plat; 5, W. K. E.—2 and 3, Yorkshire Beauty; 4, Dumelow's Seedling. —*Scott*.—Appears to be a local sort. —*H. Taylor*.—3, Warner's King; 5, S. Buckland;—1, Cellini; 2, Cox's Orange Pippin; 3, Warner's King;—*L. M. K.*—1, Mother Apple;—*M. D.*—1, Pott's Seedling; 2, Emperor Alexander; 4, Catshead. —*F. Sale*.—2, Cellini;—*G. Daw*.—Not known. —*S. W. S.*—1, Beurré Clairgeau;—*Anon.* (three large green Pears).—Pear Beurré Bachelier. —*Avon*.—1, Bucksall; 2, Cockle Pippin;—*W. H.*—4, King Pippin;—*R. T. Danbury*.—1, Beurré Bosc; 2, Duchesse d'Angoulême; 3, Pittaston Duchess (small); 4, Beurré d'Angoulême;—*X. Y. Z.*—None of your fruits are in a fit condition for naming. —*P. M. N.*—5, Catshead. —*C. D.*—1, Benheim Pippin; 2, King Pippin; Pear appears to be Bacon's Incomparable, but was too much decayed for naming. —*G. J. E.*—Senders of other fruit will be answered next week.

Names of plants.—*G. W. E.*—Orchid is *Phalænopsis amethystina*; climber is *Clitoria Ternatea*. —*H. C. W.*—*Linum perenne* (Flax). —*J. W. K.*—Fern, *Niphololus Lingua*; shrub, *Lycysteira formosa*. —*G. W.*—1, *Pholidota imbricata*; 2, *Acropera Loddigesii*. —*Fielding*.—Probably *Dendrobium Farmeri* album, but cannot be certain from such a crushed specimen. —*Twiggford*.—*Inula dysenterica* (Fleabane). —*J. Harvey*.—*Phytolacca decandra*. —*Sub. (Cutford)*.—Next week. —*Mac*.—*Thymus Serpyllum lanuginosus*. —*J. L. Baldwin*.—Appears to be the double variety of *Rosa cinnamomea*. —*J. W. B.*—1, *Aster paniculatus*; 2, *Aster laevis*; 3, *Pyrethrum uliginosum*; 4, *Anemone japonica*. —*F. F.*—1, *Aster Novae-Angliae roseus*; 2, *A. longifolius*; 3, *A. longifolius formosus*; 4, *Helianthus decapetalus*. —*C. B. C.*—The Dahlia was much crushed when received. It seems to be what is called the Cactus Dahlia, which can only be increased by roots or cuttings. —*F. Kneller*.—A species of *Nicotiana* (Tobacco), but cannot name from leaves only. —*W. G. Caldwell*.—1, *Aster longifolius*; 2, *A. turbidus*; 3, *A. laevis*; 4, apparently *Geranium pratense*, but flowers had dropped. —*Archer Hind*.—1 and 2, species of *Carex*, but what species the specimens sent are insufficient to determine; 3, *Juncus lamprocarpus*. —*T. H. A. H.*—A species of *Amsinckia* (California Bugloss).

No. 674. SATURDAY, Oct. 18, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

EARLY WINTER FLOWERS.

It may be necessary sometimes to have a quantity of bulbous plants all in flower at one time for a certain purpose, but as a rule a continued supply over as long a period as possible is a matter of greater importance. Some pot their whole stock of bulbs when received in September, and think that by forcing some and retarding others a succession may be maintained as long almost as desired. This may be done, but bulbs will keep on growing even in a cool place, and by attempting to retard too much, a glut is in the end the result. In our case, and in that of many others, the flowering season of Dutch bulbs commences with Roman Hyacinths early in November, and is continued by others of various descriptions until the end of May. Some may think this might be done easily if only one had the requisite quantity, but quantity is only of secondary importance; the secret, if there be one, lies in the management. Should the annual supply of bulbs be reduced by half or one-third, the flowering season need not be shortened thereby; on the contrary, the whole of it should be made to sustain the loss by having a lesser quantity at all times. The best method of keeping up a succession during the whole time is to divide the bulbs into at least three portions and pot them at intervals of a month or six weeks. The first cannot be potted too early for forcing, as the more gradual the latter is performed, the better the results. Roman Hyacinths are received early, and if potted in August may be had in flower early in November, a season when they are most welcome. Their season need not be limited to one particular display, as if some bulbs are retained and potted at the same time as the later varieties, they will flower equally well later on. It requires rather severe and careful forcing to obtain good Hyacinths of the coloured varieties by Christmas, although it is tolerably easy to get them ten days later.

Paper-white and double Roman Narcissi flower very early, and are most useful, especially the first named. All other varieties of Polyanthus Narcissus are well suited for pot culture to flower in spring. The first portion of the general collection of bulbs should be potted, if practicable, in September, the second at the end of October, and the third and last in the beginning of December. A rich soil should be used, as, although a great deal depends on the quality of the bulbs, a by no means small share of success must be attributed to cultivation. The pots are best filled lightly rather full; the bulbs then selected should each be pressed in singly by the hand. This is more important than many suppose, as all the bulbs will be found much more firmly placed in position at the base than would be the case if placed on firmer soil at first and covered afterwards. When potted, all should be set outside, watered, and covered with about 6 inches of rather fine ashes. This quantity should be increased in winter to exclude frost; the young shoots when growing are very tender and much injured by being frozen. The ashes are necessary

at first as a weight to prevent the bulbs rising out of the soil when forming roots. As soon as the latter take a good hold they will be no longer required for that purpose. No one should attempt introducing any bulbs into heat until the pots are well filled with roots. When removed from the ashes inverted pots should be placed over them in a cool house for a few days, and positions in higher temperatures should be given very gradually. When the flower-stem starts into growth the plants will bear more heat than before that stage is reached. Many are impatient in regard to this, and place bulbs in too high a temperature at first, with the result that the foliage grows and the flowers often do not, but instead either damp or wither away. Crocuses and Snowdrops will not bear the least forcing in heat, but they will bloom a little earlier in a cold frame than outside. Good potfuls are very pretty when in flower, but their season is very short, as the flowers soon fade.

Various methods are adopted for preparing Hyacinths and Tulips for early forcing. Some place them in boxes or pans thickly and pot up as fast as any are in flower. When three or more are placed together in a pot it is seldom that all open together in winter, and as such severely forced bulbs are of little value afterwards, the box plan has some advantages to recommend it. The later ones are best placed in the pots in which they are to flower, and 5-inch and 6-inch sizes are the most suitable. Hyacinths not much forced will produce useful flowers for cutting a second season indoors, but Tulips are not worth the trouble. Both of these, with others, may be used for planting outside after they have flowered in spring.

Many bulbs beside those already mentioned should be added if possible by those who require them for conservatory decoration. The beautiful white variety of *Gladiolus Colvillei* named The Bride is easily grown if potted now and kept quite cool all the winter in a frame. The flowers of *G. Colvillei* itself are also very attractive and well worth attention. *Narcissus Bulbocodium* is well adapted for cultivation in pots or pans, and is not half enough used in that way. Although the bulbs are not large, each will generally throw up four or five flowers, and as about this number of bulbs may be grown well in a 5-inch pot, the effect produced may be easily imagined. These are also best kept quite cool. Others requiring similar treatment, and well deserving it, are single and double Jonquils, *Scilla sibirica*, *Iris reticulata*, and *Milla uniflora*. To these may be added *Ixias* and *Sparaxis*, either in named varieties or in separate mixtures, which, combined with Dutch bulbs, make a fine display. J. G. K.

CHURCH DECORATIONS.

JUST now thanksgivings for the past harvest are of daily occurrence in every church, and the decorations on these occasions occupy much time and attention. At Christmas, Easter, and other festivals, flowers, beautiful and varied, choice and common, fragrant and scentless, and indeed every thing in the form of flowers, are much valued and extensively used; but at the harvest thanksgivings, which should be emblematic of the ingathering of the fruits of the earth, flowers, in my opinion, should be nearly or wholly dispensed with, and grains, fruits, and leaves alone should be used. There are many leaves which now assume lovely tints, and which are capable of being introduced in church decoration with excellent effect. Oats, Wheat, and Barley may all be used in a variety of ways with most satisfactory results, and fruits

should be extensively employed. Well-fruited pot Vines and Vine branches bearing clusters of ripe fruit are worthy of a foremost place in harvest decorations. Apple and Pear branches laden with fruit may be placed in many appropriate positions, and there are many wild berry-bearing plants, such, for instance, as the Blackberry, which are charming in spray and form of cluster. The growths of *Asparagus*, too, when thickly dotted with their pendent scarlet fruits, are of the utmost value; but vegetables, as a rule, unless it be finely coloured clusters of small-fruited Tomatoes, are not good material with which to decorate churches, not even on harvest festivals.

J. MUIR.

PLANTS IN FLOWER.

The African Lily in Co. Dublin.—Lady Ardilaun writes to us in praise of the blue African Lily (*Agapanthus*) in the open air at St. Ann's. Beds have been out four years and seem quite hardy. The effect is charming in autumn.

Eucharis amazonica.—I send you an abnormally large flower of *Eucharis amazonica* with a double set of petals set round a very large crown of good shape.—WM. ALLAN, Gunton.

* * It consists of two flowers fused into one—a showy bloom measuring 5 inches across being the result.—ED.

New Nerines.—I send you two trusses of Nerine. The one—a bright rose—is my own raising, and is a cross between *pubica* and *humilis*; I call it *amabilis*. The other is better in substance, and is a variety of *sarriensis*, which I call *insignis*.—MAX LEICHTLIN, Baden-Baden.

* * Both very handsome, especially the rose-coloured kind, which is very bright and effective. The other resembles *N. Fothergillii* in colour, and is equally showy.—ED.

Helianthus californicus.—This seems to us a very handsome Sunflower, of a bold and elegant habit, very stiff and firm, so much so as not to require stakes. The flower is also striking—a dark black centre and rich yellow ray. Among the 10,000 composites we grow or may grow, this one we should not reject!

October open-air flowers.—A pretty gathering of open-air flowers has been sent to us by Mrs. Webster, of Llandegai, showing that the North Wales climate is more favourable for late hardy flowers than that of London. The sorts include several of the best Asters, some showy *Snagdragons* and *Pentstemons*, *Rudbeckia speciosa*, *Achillea Millefolium rubra*, *Chrysanthemum maximum*, *Spartium junceum*, *Arbutus*, *Erica vagans*, *Cyclamen*, *Aubrietia*, and the pretty Himalayan *Polygonum vacciniifolium*.

Seedling *Coronilla glauca*.—I send you a branch of a *Coronilla* selected from amongst some seedlings of *C. glauca*. It is a much dwarfer variety than *C. glauca*, and equally hardy and floriferous; as a pot plant, it would look equally as well as a *Genista*. I think it deserves a distinctive name. I have shown it to several nurserymen and they all say that they have never seen anything like it. I also enclose a branch of the ordinary *C. glauca* for comparison.—W. C. R.

* * Quite distinct from the common *C. glauca*, the branches being more densely set with foliage and the flowers of a deeper orange. We consider it superior in every respect to the type.—ED.

***Oattleya speciosissima*.**—Two uncommonly fine blooms of a superb named variety of this *Cattleya* have been sent to us by Mr. Lumsden, Balmédie, Aberdeenshire, who states they were produced on the current year's growth. The flowers are remarkable for large size and broad sepals, which are deep lilac in colour; the lip, which is large and circular, is deep amethyst with yellow in the throat. Such a fine *Cattleya* is particularly valuable in mid-October. Mr. Lumsden also sends a good twelve-flowered spike of *Odontoglossum crispum*.

***Polygonum vacciniifolium*.**—This is a beautiful rock garden plant. It is a native of the Himalayas, and is perfectly hardy in this country. It forms a dwarf trailing tuft of slender stems, clothed with small shining foliage. The flowers are small and of a delicate rose colour, arranged in neat spikes from 2 inches to 3 inches long, tapering to a fine point. The habit is neat, and the procumbent branches produce their flowers in great abundance during the autumn months; when hanging over large stones they have a charming appearance. This *Polygonum* is not very particular as to soil and situation, but it seems to do best in light, sandy soil on the southern aspect of a rockwork or Ivy bank, where it spreads very rapidly. It flowers at the present season when the rockery is almost bare, but it can also be easily grown in pots, and forms a most

effective plant for greenhouse decoration.—CL. SONNTAG.

Gigantic Odontoglossum spike.—An extraordinary flower-spike of *O. crispum* (Alexandria) has been sent to us by Dr. Paterson, of Fernfield, Bridge of Allan. It carries upwards of fifty blooms on various branchlets. Dr. Paterson writes as follows respecting it: "When in Mr. Low's nursery some years ago, and he had just received an importation of Alexandras, I observed that half a dozen of the lots had unusually large and thick dried flower-stems, so I purchased three of the smallest plants. The spike I send you is from one of the plants; the other two, being equally robust in habit, also throw very strong spikes, and are even finer varieties. Can these plants have been seedlings with vigorous constitutions? I think the variety might be called giganteum. All orchidists who have seen the spike declare they never saw a finer flowered Alexandria." Whether this exceptionally fine spike is due to a particular variety or not is a doubtful point. We should rather attribute it to Dr. Paterson's skill in Orchid culture.

Fuchsia Sir Henry Pottinger.—This fine old Fuchsia is probably nearly extinct, yet in some respects it has not been surpassed by the thousand and one varieties raised since its day. It was one of the pioneers of the light race. The flowers when in their best state are very large, of great substance, and have a glittering surface, although their shape does not much accord with the modern criterion. The habit of the plant, which is only of moderate height, is decidedly weeping. The specimen from which the spray sent was taken is a 3-foot standard and about forty years old. It is in a 12-inch pot, and from associations is much revered here. The bloom is arranged in thick, drooping racemes at the ends of the branches, some of which are pendent from the top of the plant to a foot below the base of the pot standing on a bench. It has been in flower nearly the whole of the summer. To bring about this, however, it requires a sumptuous diet, and it is necessary to remove the berries, which it yields in abundance.—J. M., *Charmouth, Dorset*.

***A showy variety in the way of the Lord Beaconsfield.—ED.

NOTES OF THE WEEK.

Finsbury Park. The usual display of Chrysanthemums in this park will be opened to the public to-day, October 18. The usual annual displays also in the Temple Gardens are open.

"Forestry."—The proprietorship of this monthly magazine work has passed from Messrs. William Rider & Son to Mr. Charles Anderson, jun., the proprietor of the "North British Agriculturist," and in future the magazine will be published in Edinburgh.

The Walnut crop.—The crop of Walnuts in the district from which I write is the best we have had for several years past. It is not only abundant but the quality is also good, there being but few Nuts without kernels. I notice that the green shell is unusually thick this season.—J. C. C.

Town trees.—Trees are being planted on each side of the improved portion of Gray's Inn Road; and it is expected that the planting will be continued by the St. Pancras Vestry on that part of the thoroughfare which is under their jurisdiction as far as King's Cross. This contemplated improvement will convert a rather dingy London road into a handsome promenade.

A new industry has just been started in East Kent—that of growing crops of Lavender and Peppermint for the purpose of extracting the oil and supplying it wholesale. A large breadth of land at Grove, near Canterbury, has been planted with Lavender and Peppermint by way of experiment, and the result has proved in every way satisfactory. It has, therefore, been determined to establish extensive works on the spot in order to carry on the process of extracting the oil from these plants, neither of which, it is stated, has ever been cultivated before in Kent.

Distribution of plants.—The commissioners of Her Majesty's Works and Public Buildings intend to distribute this autumn, among the working classes and the poor inhabitants of London, the surplus bedding-out plants in Battersea, Hyde, the Regent's, and Victoria Parks, and the

Royal Gardens, Kew, and the pleasure gardens, Hampton Court. If the clergy, school committees, and others interested will make application to the superintendent of the park nearest to their respective parishes, or to the director of the Royal Gardens, Kew, or to the superintendent of Hampton Court Gardens, in the cases of persons residing in those neighbourhoods, they will receive early intimation of the number of plants that can be allotted to each applicant, and of the time and manner of their distribution.

The International Forestry Exhibition in Edinburgh was brought to a close on Saturday. Throughout the day and during the evening the attendance was very large, the buildings and the grounds outside being crowded. The high, unsteady wind and, it was said, a slight accident prevented the ascent of the balloon. It is estimated that nearly 500,000 people have visited the exhibition. As to the financial results, it is believed that there is likely to be a deficit of not less than in all probability between £500 and £1000. The accounts have not yet been made up, and, accordingly, no exact statement can be given; but the above estimate is believed to be only too well grounded, and certainly not over the amount of the deficit that may be looked for when everything now due has been paid off. This deficit is attributed chiefly to the heavy expenditure that has been necessary to the carrying on of the exhibition, with all its attractions. The buildings, in the first place, cost upwards of £7000; that of the electric light has been, it is said, about £1500; and £36 a night has been paid for other illuminations. The general expenses have been very heavy—heavier than was at first anticipated; and in the general expenses are included a vast number of important items for every-day requirements, which have run up into a formidable figure. The promoters of the proposed School and Museum of Forestry have now obtained from the Lawson Seed Company a place for the temporary accommodation of the exhibits that have been promised for the museum, and, accordingly, it is understood they do not propose to acquire any considerable portion of the exhibition buildings. These in the course of a short time will be taken down and removed.

Blue Grapes.—I send you some clusters from my blue-berried Vine described in your columns some few years ago as one of the good things in my garden. I should not be far wrong this year if I said it is the best. Certainly it is so if the admiration of beholders—and specially of ladies—is any proof of excellence. I could not say how often I have been asked for some of these Grapes in order that they may be painted, and I have sent away boxes full of them for that purpose in all directions. I see now why *Vitis humulifolia* is so little known, and it comes as a surprise even to such experienced gardeners as the Rev. T. H. Ellacombe, of Clyst St. George, or to his son, the vicar of Bitton. The beauty of this Vine when it is at its best is quite undeniable, but it often, even here, goes three or four years without coming to perfection, and it scrambles all over the place with astonishing vigour. The summer must be a continuously hot one for the Grapes to ripen well in September; if it is wet in July while the Vine is in blossom, it will do nothing more. It follows from all this that either it must be grown under glass, or success must be looked for only once in three or four years. The first supposition is not often complied with, because Black Hamburgs stand in the way, and the Vine becomes so discredited by the failure of two or three years in succession in open air, that it is at once given up. Moreover, I should not think it ever would do anything at all in a place which is damp and cold. But given only a really old-fashioned hot summer and an entire absence of rain for weeks and months together and in any suitable place, *Vitis humulifolia* is sure to be an object of exquisite beauty. Its numerous clusters of clear turquoise-blue are very engaging, and they are so utterly unlike anything else which I have ever seen, that they command attention at once. Even so great a traveller as Colonel Stuart Wortley

has been very much struck by them, and he is only one out of many. The chorus of praise has been unstinting the last few weeks which my blue-berried Vine has received. I would just add that it strikes easily in a little heat in mid-winter, and I daresay it may be grown from seed—at any rate, Mr. Horner tells me he intends to try and raise it in that way.—H. EWBANK, *St. John's, Ryde, Isle of Wight*.

***A pretty-fruited Vine, the berries of which are about the size of Peas and pale blue in colour.—ED.

Apples and Lilies.—In a sloping, walled-in garden I recently saw a clump of gold-rayed Japan Lilies with half opened blossoms and great plump buds, and quite near to it, for contrast, great rosy-cheeked Apples hung in festoons down the grey-leaved branches. Those Apple trees are twice beautiful within the cycle of one short year. In spring the trees are like rosy snow rucks against the sky, while now one may perceive that the ancient dream of Hesperidian "Apples of gold" is true in our own time. On a sunny border the lilac-starred Asters were in bloom, and it is to them the butterflies come for nectar and to sun their wings. Red Admirals and the Tortoiseshell, large and small alike, are there with the bees a jocund company. The best of the old Michaelmas Daisies are beautiful in themselves, and afford us the joys of lovely insect life as well, but one lesson this old walled-in garden teaches is an old one: we must never divorce the fruit trees from the flowers.—F. W. B.

RICHARD GILBERT.

AMONGST the foremost of British gardeners is Mr. Gilbert, of Burghley, a man well known to readers of THE GARDEN. He began his career in the gardens at Worksop Manor, under the late Mr. John Wilson. Afterwards he spent some time in the Castle Gardens at Arundel, and he was likewise a student gardener at Chiswick during the best times of that grand old garden. For the past ten or fifteen years he has had charge of the gardens at Burghley, where his cultural successes have been greater than those of most men, a fact to which our pages bear ample testimony. As an inventor, Mr. Gilbert has given us improved hand-lights or portable protective plant frames, and as a raiser of new flowers and vegetables he is likewise favourably known. The charming double-blossomed Chinese Primroses which he originated are still to the fore, and amongst vegetables we need only mention Chou de Burghley, and the Universal Savoy, and an improved selection of Brussels Sprouts to show what he has done in that branch of gardening. In short, in fruit and vegetable culture Mr. Gilbert has been especially successful, as the many first-class awards which he has received abundantly testify. As a contributor to horticultural literature he is well known, and his communications, while, as a rule, brief, are full of humorous point, and abound in strong common sense. The annexed portrait is acknowledged to be an excellent likeness of him.

ROYAL HORTICULTURAL SOCIETY.

AN EXAMPLE.

WHILE our Royal Horticultural Society has been frittering away its opportunities and resources and lamenting its misfortunes, it is interesting to turn to a kindred institution, founded under far less favourable circumstances at a much later date, prosecuting its work with far less assistance, and yet efficiently and successfully aided by a small army of observers, which, strange to say, are mostly gardeners. I allude to the Scottish Meteorological Society, concerning which a few particulars may be interesting. This society may be said to have begun almost without funds—casting its bread upon the waters, so to speak—and trusting to public encouragement to help it to continue a useful work, the importance of which is now beginning to be fully realised. The object of this society is to investigate meteorological phenomena generally, its connection with public health, agr

culture, and natural history, and with that view it has established "stations" under the care of competent observers, mostly head gardeners, over the whole of Scotland, at the Faroe Islands, Iceland, and elsewhere, while it is in communication also with other observers and societies in other parts of the world. One of the latest stations formed is on the summit of Ben Nevis, from which great things are expected, while a marine station, equipped with all the necessary appliances, including a steamboat, has been established at Granton for the purpose of investigating problems connected with our sea fisheries and other matters connected with marine animal and vegetable life. Annually, or oftener, the society publishes a full and most interesting report of its proceedings, many of which have a real interest for gardeners and farmers. Under the presidency of the Duke of Richmond, an influential council, and an able and enthusiastic secretary and his staff, the work proceeds smoothly and methodically, and extends in importance and usefulness every year. The working expenses amount to an incredibly small sum, showing the most rigid economy necessitated by the very limited funds at the disposal of the society, and provided, I believe, mostly by voluntary subscriptions. The report is an exhaustive and laborious compilation, such a task as our Royal Horticultural Society has never had to face, and before which its reports, if they saw the light, would dwindle into insignificance. And yet the Scottish Meteorological Society is for all practical purposes similar to the much more pretentious Royal Horticultural Society. It is constituted on the same lines and does its work by the same means. There is only this difference between the two—that whereas the one knows its work and does it, the other never seems to know what it is going to do next, and is always waiting for something to turn up, notwithstanding that it has had by far the best opportunities. Yet if the Royal Horticultural Society would divest itself of some of its needless responsibilities, cease those aspirations which it can never realise, and confine itself to the work that it can do, and which belongs to it, it might yet beat the Meteorological Society in its sphere of usefulness, because it has a more popular and wider field, and would no doubt be helped in its work by many voluntary assistants.

The great want of horticulture at the present time is exact information and tabulated facts on almost every important subject, which are easily procurable if only some properly organised body, working with a will, would collect them, arrange them, and generally digest them for the benefit of all concerned. The Apple show was a step in the right direction, *i.e.*, if we get the promised report, and anything comes of it, but on that occasion the "congress" seems to have saddled itself with more than it could accomplish. Half-a-dozen pomologists or intelligent fruit growers sitting

periodically in council, and taking the work deliberately, might settle Apple nomenclature and the question of kinds best adapted for different parts of the country, and other matters pertaining to culture in a year or two, and without any great exertion, if they set about it in the right way, and placed themselves in connection with cultivators throughout the country, not encumbering themselves with the help of everybody who chooses to offer it, but only that of responsible and appointed agents and correspondents. In this way, by taking up one thing at a time, and working it out methodically, the work would proceed and something would be done.

As constituted at present the Royal Horticultural Society appears to consist of a number of

stands at present it might be blotted out of existence, and would never be missed. J. S. W.

THE GARDENS AT TRESCO ABBEY.

TRESCO ABBEY, a foundation of the Benedictine monks of Tavistock, dates from the tenth century. From the insignificant ruins that now remain of it, it could never have been very grand. The present abbey is a queer, many-gabled house, built on a rocky cairn facing the channel which intervenes between Tresco and the largest of the islands St. Mary's. In the rear the ground ascends still higher. To the left of the entrance a descent conducts to the gardens; to the right a carriage drive leads to the populous parts of the island. The Abbey Walk, a carriage drive, could not be improved upon, if only Mr. Dorrien-Smith would plant out one ugly gap disclosing some uncouth sheds. It is about three-quarters of a mile long, and thickly planted on both sides with ever-varying kinds of foliage. The commonest, but at the same time the handsomest, tree is *Cupressus macrocarpa*. This sea-loving Cypress is the Conifer that succeeds best on the islands. Its growth in the sandy soil of Tresco is more vigorous even than on the mainland; and when hundreds of them are seen in close proximity, as in this drive, the effect of the bright green foliage peculiar to the tree is most exhilarating and entrancing. The late Mr. Augustus Smith wrought quite a change in the vegetation of the island, and none of his introductions have turned out a failure, except the Pinaster. Those who have seen the magnificent old Pinasters of Mount Edgumbe cannot credit the report of its being a short-lived tree, and so the verdict anent the Scilly specimens must be that they have been wind-tossed into the reverse of a green old age. It is a pity they are so gnarled, dwarfed, and brown, for there are some thousands of them. However, they have answered the main purpose for which they were planted, and



RICHARD GILBERT.

individuals, each acting on his own responsibility, and doing what seems right in his own eyes, but by far the greater portion of them do nothing at all, and are mere dummy members. We shall be told, I daresay, that there are three committees, one scientific, one for fruit, and one for flowers, all doing useful work. Well, the two last appear to exist principally for the benefit of the trade to register their productions and help their sale, and as for the scientific committee, nobody seems to think it worth while hardly to record its desultory conversations. Still, these bodies exist and spend time and money, and if anyone belonging to them had the courage and enterprise to take the initiative, and start a proposal to place the society on a new footing, with the purpose of performing some good work, some specified task, I have no doubt they would receive support from horticulturalists of all degrees. As the Royal Horticultural

have afforded ample protection for the younger and more tender trees. The carriage drive is cut along the side of a slope, and on one side the ground rises sharply. It is on this side the Pinasters are planted, with an undergrowth of *Rhododendron ponticum*. At every few steps *Dracænas* are mixed with the *Rhododendrons*, one, a local hybrid between *Cordylone erythrorachis* and *Dracæna australis*, and combining the habit of the former with the foliage of the latter, being very striking. Where the *Rhododendrons* will not grow the ground is covered with Bracken. The various New Zealand Flaxes are planted largely, and every now and then occur large examples of *Chamærops excelsa*. Turkey Oaks, bronzy *Elæagni*, and silvery *Eucalypti* abound, and in a sheltered alcove are brought together *Pinus insignis* and *Picea nobilis*, with some spiny *Araucaria Bidwilli* at their feet. A very noticeable plant abutting on the road is

a *Sparmannia africana* quite 30 feet high and thick in proportion. A springy, mossy path leads down through a glade of Cypresses and blue Hydrangeas, the latter large dense shrubs, to a Reed-grown lake. There is one retreat, with tall Cypresses, Rhododendrons, and *Acacia Melanoxylon* planted round, and devoted to Indian Rhododendrons. Here are healthy plants of *arborescens argenteum*, *Edgworthi*, *Thomsoni*, *ciliatum*, *Hodgsoni*, *jasminiflorum*, *Maddenii*, *Nuttalli*, and other well-known kinds. I must leave to the reader the picturing of this orderly medley of tropical and cool vegetation. Let him try to keep in view what the entire *échappée de vue* must be and also the strange beauty of each single group as it unrolls itself to the advancing footsteps. For the first hundred yards as one leaves the abbey the foreground on the left is a bank of Hydrangeas. In the month of August they were densely covered with azure blooms. On the opposing side are Fuchsias galore, some 20 feet high, also in bloom. From this point a path arched over with foliage leads down to the foot of the cairn of rocks on which the house is built. Turning to the left, on reaching the bottom is a pathway leading along the side of some marshy ground in which the *Arum Lily* is growing in a wild state.

ROCKWORK.

The position of the house on a basis of natural rockwork offers an opportunity, of which there can be but few parallels, to the landscape gardener. Very little, except in the cutting of a path, has been done to alter the natural formation. Soil has, of course, been brought to it, and all the other usual means taken advantage of, to make plant life possible on a rocky bed. Some of these methods by which a succulent is made to flourish on what looks like the arid face of a rock richly deserve a note, but space in this paper forbids. The rockwork surrounds the house on the garden and lake sides of it, and it is different in character with each aspect. Taking the latter side first, let us make our survey of it from a low battlemented wall which commands it, and at the same time edges a narrow path round the house. Beneath the wall is a row of *Agave americana* destined to flower in the course of a few years, and below it a small group of shrubs which separates the two rockworks. The one to the left is bright with flowering Pelargoniums, and the good old-fashioned varieties are nearly all here—*macranthum*, *Shrubland Pet*, *Rollisson's Unique*, *Prince of Orange*, &c. These flower all through the year and are as pretty in winter as in summer. Hardy as well as Mexican *Yuccas* are dotted about. Other plants there are, but these are the two prevailing, and as the next list will be multitudinous, let this be known as the Pelargonium rockwork. The other on the garden side contains one of the richest and most varied collections of *Crassulaceæ*, *Cacti*, and other suitable plants to be met with. There is a hollow basin at the base in which is an Apongeton-covered pool. Overhanging are plants of *Acacia dealbata* and the curious and leafless *Beefwood*, or *Casuarina*. As the rockwork ascends the eye notices that every crevice is filled with *Sedums* or *Echeverias*, and any little gap closed by *Sempervivum tabuleforme*. The *Mesembryanthemums*, in great variety, trail everywhere and encroach one upon the other. A path leading up to the abbey intersects, and at the summit of the rockwork is a flagstaff. The part above the path is rich with *Cacti* of various kinds and *Aloes*; of the latter the following varieties are noticeable: *spicata*, *depressa*, *chinensis*, *Saponaria*, *socotrina*, *ciliaris*; other plants are *Apicra deltoidea*, *Rochea perfoliata*, *Crassula coccinea*, *Cotyledon velutina*. Taller growth is represented by the bearded *Dasylium*, *Dracæna Draco*, *Fourcroya longeva* (which frequently flowers in these gardens), the Prickly Pear, *Agave americana variegata*, and others. Besides all this a large quantity of Ferns are planted; and just below the flagstaff an *Araucaria imbricata*, cut off about 4 feet up, throws its branches over the cliff, from which they hang down gracefully. From the stump three young upright shoots have sprung. This is only a very imperfect list of the plants to be seen here, but it ought to

be enough to give some conception of a unique display of flowers and foliage.

GENERAL PLAN OF THE GARDEN.

It is formed on a considerable slope, and consists of three terraces, with walks along the top of each, parallel to each other. Every inch of ground is planted, and the whole, when looked down upon from an eminence, shows as one dense mass of foliage. A tennis ground at the foot is the only expanse of lawn to be seen, and as a great part is meant to be a wild garden, any exact description would be futile. The paths and walks between the terrace walls are many and various, and it requires a stay of a week or more to have a full comprehension of their botanical importance. Adjoining the tennis lawn is what is called the Wilderness. It is a grove of Alders and Sycamores, beneath whose shade and shelter are planted Tree Ferns. Plants of *Alsophila australis* and *excelsa* and the various *Dicksonias* have stood here for a long period. I have seen specimens at Penjerrick, one of the most favoured localities in Cornwall, that have stood out for five years, but they have all succumbed in very severe winters. But in Scilly severe frosts are unknown, so much is the atmosphere tempered by warm sea breezes. *Cyathea medullaris* has made extraordinary growth and is furnished with giant elliptical fronds. The stems are all set in fanciful rockwork bases, and piles and lines of stones, overgrown with *Lomaria magellanica* and some hardy British Ferns, are scattered about under the trees. This part of the garden takes the fancy of visitors *d'outre mer* as much as any, and justly so, for the effect is not only pleasing, but it is also strange and unique.

THE TERRACE WALKS.

The first of these, or the long walk, has been illustrated in most of the gardening papers. It is confined on both sides by an endless variety of plants, and has in parts an exact tropical appearance. The *Dracænas*, planted about thirty years, have attained a height of as many feet, and are sturdy-looking trees with sulcate bark. They can be counted by the score, and whole avenues of them diverge from the main pathway. They flower and seed in profusion, as likewise do many of the *Chamærops*, numbers of which are also to be seen. One very large *Eucalyptus* has unfortunately been wind-scorched, but the smaller ones are very healthy. Club Palms, *Camellias*, and *Oranges* mingle with *Araucaria excelsa* and *Seaforthia elegans*, one large plant of which has fronds quite 12 feet long. All the *Myrtaceæ* nearly are hardy, and by the side of this walk are the resplendent *Metrosideros robusta* and various varieties of New Holland *Callistemons* and *Leptospermums*. *Clethra arborea*, greenhouse *Andromedas*, *Melaleuca hypericifolia*, *Correas*, *Tetranthera californica*, *Myrsine undulata*, *Cassia corymbosa*, *Candollea tetrandra*, *Griselinia lucida* also go to swell the list of plants in its immediate margin. Variegated foliage is supplied by *Bambusa variegata*, the creamy edged *Coprosma variegata*, and the variegated forms of *Eleagnus* and other shrubs. Vases are placed at regular intervals containing *Opuntias*, *Cacti*, *Aloes*, and so on. Flowering plants are littered about everywhere, and the vacant spaces between the shrubs are either filled up with them, or with such plants as *Fourcroyas* or *Dasyliums*. Besides the *Dracæna* avenue mentioned above, there are numerous outlets from it all more or less remarkable, one piercing a passage through a Bamboo thicket, another through an arbour of *Veronicas*; two paths also cross at right angles, going in one straight line from the base to the top of the gardens; but of these, more in another place. The highest walk of all, although not less attractive in plant life, has the additional attraction of a wide view. From here the sea in its different moods, whether lazily dallying in the sunglare, or showing its white teeth when the wind blows wild and free, can be watched. Here also are vases and various stone receptacles and orifices filled with *Mammillarias*, *Aloes*, *Gasteria glabra*, various of the *Crassulaceæ*, and such plants as *Pachyphytum bracteosum*. The following shrubs may also be mentioned: *Senecio Fosteri*, *Escallonia montevidensis*, *Polygala Dal-*

maisiana (quite a large bush), *Solanum lanceolatum*, *Olearia stellulata*, *Dodonæa viscosa*, *Beaufortias*, and *Myoporums*. All the above are interspersed among numberless flowering plants, and above the terrace the ground rises to a Gorse-covered ridge.

INTERSECTING WALKS.

Two of these deserve notice. Their direction is straight up the slope; one begins from an old stone seat surmounted by Lichen-covered rocks, and with a mound planted with *Agave americana*, *Dracæna australis*, *Fuchsias*, and other plants in the background. After a little distance it bisects a circular parcel of ground, called the Hop Circle, from the graceful festoons that the Hops trained on iron bars form around it. Within this charmed circle are also *Aralia papyrifera*, *Chamærops humilis*, and some free-flowering *Fuchsias*. Any of our older gardeners and amateurs would be vastly pleased to wander about the Tresco grounds, for most of the dear old *Fuchsias* are still preserved here, among them being *Riccartoni*, *corymbiflora*, *corymbosa*, *splendens*, *Thomsoni*, *globosa*, *conica*, and *coccinea*. From the Hop Circle this path leads under an Ivy-clad arch to the remains of the old abbey—

Where the dead red leaves of the year lie rotten,
The cold old crimes and the deeds thrown by.

But Mr. Swinburne's verses are not applicable in this case, for the few gravestones are almost hid by masses of *Agapanthus*, and the interior looks like some old-fashioned garden. A little further is a rocky escarpment burning with *Crassula coccinea* (August). The second of these paths takes its origin from an old cresset burner brought from the island of St. Agnes, but now filled with *Geraniums*. After crossing the long walk, it is enclosed on both sides by tall hedges. At the head, visible all the way up, is a fine head of Neptune, to reach which is a flight of steps cut in the rock. As the ascent of these steps is made the eye ranges over the part of the garden intervening

BETWEEN THE TERRACES.

Just below this standpoint is a quadrangular flower garden devoted to *Geraniums*, *Calceolarias*, and their usual concomitants. It is bounded on one side by a wall, upon which are trained *Solanum jasminoides*, *Abutilon vexillarium*, *Clianthus puniceus*, *Mandevilla suaveolens*, and some rare *Acacias*. Opposite is a hedge of *Eugenia Ugni*. At the head is a bank of large golden *Agave americana*, almost in a flowering state, and at the foot is a group of shrubs, with such Palms as *Areca sapida*, *Phoenix dactylifera*, and *Chamærops Palmetto*. The shrubs behind them consist of various *Aralias*, including *Sieboldi*, *trifoliata*, and *dactylifera*, and also *Tupidanthus calyptratus*, which resembles an *Aralia*. Still further back and well sheltered are *Banksia serratifolia* and *grandis*, the former in flower. Across the middle of this strange flower garden, which grows lovelier the more we gaze at it, is a row of tall *Dracæna australis*. Not far from the outskirts, and adjoining the abbey ruins, is a very dainty corner. Here is a fine clump of Hydrangeas surrounding an ornamental stretch of rockwork thronging with the everlasting *Dracæna*, and nestling under the wall is a bank of *Puya chilensis*. This *Bromeliad* flowers most seasons, and has increased in stock to a remarkable degree. Near here is also a fine plant of *Ozothamnus rosmarinifolius*. On the opposite side to this there is a very pretty walk joining the terraces. By its side, in stall-like enclosures formed of hedges, have been planted out for many years *Eriostemons*, *Boronias*, *Croweas*, *Barosmas*, and such greenhouse plants as *Brachysema acuminatum* and *Mitraria coccinea*. So hardy have they proved themselves, and so satisfied is Mr. Dorrien-Smith with their growth, that he intends to plant out a large collection of *Ericas*. This will be an additional charm to what is already a garden and treasury of dainty devices and beauties. This walk is one of the prettiest in it, for after crossing the long walk it threads its way through a dense shrubbery, two noticeable trees it passes near being tall specimens of *Taxodium sinense* and *Araucaria Bidwilli*. This latter has unfortunately grown too high, and

has lost its leader thorough the force of the wind. Other parts of the garden are known as higher and lower Australia, and are planted with, amongst others, *Corypha australis*, *Tasmania aromatica*, and several varieties of *Hakea*. A very common climber, and one which in Scilly grows as freely as any other, is *Muhlenbeckia complexa*. Bulbous plants again do extremely well, and the ground is full of *Nerines*, *Narcissi*, and *Amaryllis*. *Belladonna*, *Agapanthus africanus* forms large dense masses of foliage, and throws up enormous flower-spikes, and under a sheltering wall *Hedychium flavum* usurps a large extent of ground. There is no better vantage ground than the top terrace from which to note the position and contour of the different islands. Scilly sunsets are famous, and to stand here, with the fragrance of the gardens wafted up in the still twilight hour and watch the rocks changing and flashing as they answer the long farewells of the departing sun, is to taste one of the purest of terrestrial pleasures. On a stone slab near one of the entrances is written, after some injunctions and requests, which a man must be *mal' Vichi* indeed not to respect, "Enter then, and it so please thee, and welcome." Scilly is not a seaside place agreeable to the hearts of wives and daughters, but do ye, who love our craft, be marble to their complaints and go. There is no excuse for unfettered birds.

C. A. M. CARMICHAEL.

ORCHIDS.

HARDY ORCHIDS.

EARLY in April the first Orchis (*O. mascula*) was in flower, and from that time up to a fortnight since, when the Lady's tresses (*Spiranthes autumnalis*) closed the season, we have had an almost uninterrupted succession of bloom. The past warm, dry summer has no doubt been beneficial to many Orchids, more especially those of Continental origin, and we may fully expect that, owing to the tubers being well ripened off, a fair amount will reappear in full vigour next season. To begin with our native species, *O. mascula*, *O. fusca*, and *O. pyramidalis* have done exceedingly well, the latter especially being quite a treat when in full bloom. Indeed, too much can hardly be said in favour of this plant, as for ease of culture, beauty of flower, and lasting qualities when in a cut state it is perhaps unsurpassed by any other. *O. fusca* is also a most desirable species, but exceedingly rare and difficult to obtain true. For both these species good red loam is all that is required, with a handful of rough grit or sand placed round the tubers at the time of planting. The spotted-leaved Orchis (*O. maculata*) is a first-class plant, but requires a great amount of care in transplanting and rich, damp loam in which to grow. Like most of the palmate-tubered Orchises, this plant is very impatient of disturbance, and when once thoroughly established, should be left alone.

The Marsh Orchis (*O. latifolia*) I cannot manage, although with this species I have gone to a great amount of trouble in transferring it to my garden. Destruction or injury to the least rootlet may be relied on as destruction to the plant as well—at least such is my experience. It is, however, a lovely plant, with a peculiar fresh green tint of foliage that is wanting in any other species. The flower is also beautiful in the extreme, and cannot but induce anyone who has seen it in its native haunts to cultivate the plant. I believe Miss Hope's plant (*O. maculata superba*) to be more nearly allied to this species than to its namesake, *O. maculata*.

I have frequently found this plant, or what I consider equally as good, in conjunction with the Marsh Orchis, and could not help thinking how nearly allied, both in appearance and habit, these two plants were. *O. ustulata*, a miniature copy of *O. fusca*, is hard to deal with, and requires some peculiar treatment; I wish I knew what. It flowers well for a season or so, and then disappears without the least warning. What a lovely little gem is the Musk Orchis (*Herminium Mon-*

orchis)! It is one of the easiest to grow, increases rapidly, and has deliciously-scented flowers resembling tiny pearls. It wants a raised mound of limy loam, where the plants will not suffer from excess of moisture, and to be left alone. This Orchid is different from most others in the young tubers being formed at the end of the roots, so that in lifting the plant great care is necessary to avoid damage. It is an autumn or end of summer flowering species.

Of *Habenarias*, the Butterfly Orchid (*H. bifolia*) is a good thing, pretty easily cultivated, and a profuse bloomer. The flowers, like those of the latter species, though in a much greater degree, are sweetly scented, more especially in the evening, when, after a shower, the delicious fragrance can be distinctly smelt at some distance from the plants. *H. albida* and *H. viridis*, two dwarf-growing plants, are interesting, but not ornamental, and rather difficult to cultivate, the latter especially. Good damp loam is the secret, if there is any, in the cultivation of these plants, to which, for *H. albida*, a slight peaty mixture will be a good addition. I have a variegated-leaved Butterfly Orchis which offers a rich contrast to the normal form.

Most of the species of *Cephalanthera* and *Epipactis* are difficult to manage, except *C. ensifolia* and *E. palustris*. The latter is a most ornamental plant when in full flower, and one that I can honestly recommend to anyone possessing a damp bed in which to grow it. *Liparis Loeseli*, one of our rarest little bulbous Orchids, succeeds well with me, and increases in size from year to year. Mr. Burbidge, if I remember rightly, describes this plant as epiphytal, but if so, it is epiphytal with me in pure leaf-mould and brick dust. I cannot grow *Malaxis paludosa*—perhaps it is epiphytal.

Various species of *Spiranthes* are ornamental plants, notably *S. æstivalis* and *S. autumnalis*, that is when well grown and seen in perfection. Of the *Ophrys* tribe, *O. apifera* and *O. arachnites* are the most desirable, but they are difficult to keep and require occasional renewing. *O. apifera* has, however, been established and flowering well with me for some years past.

Amongst foreign hardy Orchids, *O. foliosa* is the best and most easily managed. Planted in a damp, peaty, somewhat shady bed, it gives no further trouble, unless it be to divide the tubers when they have increased beyond the limits of the patch which they were allotted. Both foliage and flower of this Orchid are ornamental, the latter often rising 3 feet in height, and appearing at some distance like a gigantic Fox-glove. The wavy-leaved Orchis (*O. undulatifolia*) is well worthy of cultivation, and amongst European forms certainly bears the palm. It succeeds better here than any other of the Continental species, being extremely hardy and well suited for different positions. The flowers, which are thrown well above the foliage in bold handsome spikes, are very conspicuous, and being of good substance last for a considerable time. There is a variety of this plant with spotted leaves that is a decided improvement, the flowers being much larger and the plant altogether of a more robust habit than the original. *Orchis globosa* bears large spherical heads of bright pink flowers, and has several qualities which specially recommend it for cultivation. Another Italian Orchid that does well here is *O. sambucina*, which bears moderately large spikes of yellow flowers strongly scented of Elder. The several forms of *Serapias* are most curious and interesting, not only from their varied colours, but peculiar construction as well. *S. Lingua* bears large showy flowers of a brownish purple colour, the lip being exceedingly long and resembling a tongue, from whence the name is derived.

Of *Cypripediums*, *C. parviflorum* is distinct and rare. The flowers, usually two on a stem, are of a bright yellow like a *Calceolaria*, and the sepals long, twisted, and of a dull brown colour. I have been more successful with this plant than any other of the class, which may no doubt be attributed to my receiving good healthy specimens to start with. It is planted in leaf-mould and sand,

and has increased to a greater extent than any other Orchid in my collection. *C. acaule*, *C. pubescens*, and that rare form with almost pure white flowers (I refer to *C. candidum*) all do well, and seem quite at home in their respective quarters. Our native *C. Calceolus* I cannot coax into flowering, but I will try Mr. Wood's sand recipe, and at some later time report the success. One thing, I have never been able to obtain really good roots of this Orchid, though I have more than once purchased it by the half dozen, to which, more than cultivation, I attribute my repeated failures; and if someone who has succeeded with this plant will send me an established specimen, I will be most thankful, and reward them by some other species in return.

With the North American *Habenarias* I can do little or no good, our summers being too cold to ripen the tubers. They bloom well enough for a season after being imported, but seldom again. After paying a great deal of attention to hardy Orchids I must confess that they are, as a rule, by no means easy subjects to deal with, and it is only after repeated failures that I have got some species to become established, or rather reappear, from year to year. They are, however, well worthy of a little extra attention, which is amply repaid by the beauty of bloom produced by most of the species.

A. D. WEBSTER.

Llandegui, Bangor.

Orchid sales.—Seeing the prices now being paid at Stevens's "for really good forms of *Odontoglossum crispum* one would think it would be a profitable employment for a collector abroad who would select the best varieties and mark them ere he consigned them to Europe. Only the other day we heard of half a plant in flower fetching £30 or £40, and yet imported plants may be had for as many pence. I know a little of the difficulties and dangers under which collectors must ever labour, but I also know the advantages they often have of liberal European assistance, and native labour not over expensive, and in their own interests I ask of them as a favour that they will select and mark exceptional variations, seeing that most men who buy are liberal enough when they can conscientiously write 'for value received.' I wrote this much in December last after hearing a collector complain of the low prices paid at auction sales, and I now am glad to find that the plan suggested has been adopted by Mr. Maw in the case of Masdevallia Harryana. Out of several thousand plants seen in flower, only the finest varieties were selected, and every plant offered was numbered, and had one of its own flowers dried beside it and on view. The plants had been carefully selected, and were brought home in good condition. About four hundred plants only were offered, and the best plants realised from four to six guineas each, the whole importation realising nearly £400—not at all a bad result for a single consignment. Messrs. Protheroe & Morris were the salesmen, and we have no doubt whatever, now that the ice has been broken in such a practical way, that a little more care in selecting only the best varieties will now become general. In the case of *Odontoglossum Alexandræ* this care is especially necessary, as many of the later importations have contained many weedy plants, having small, poorly coloured flowers, "with petals like a wind-mill," as an old Orchid fancier once told me after blooming some of them. Just now the cost of collecting, packing, carriage, and shipment to Europe of *Odontoglossum Alexandræ* varies from £40 to £50 per thousand, and, as we already know, one really first-class variety is worth the same money. Now that we have made a successful beginning in the way of choice selection instead of the indiscriminate scraping up of good and bad alike, we may hope for better and more satisfying results to collector, salesman, and purchaser alike.—VERONICA.

Sand (R. V.).—The sample you send appears to be suitable for horticultural purposes—i.e., if free from lime, which it seems to be.

BOOKS.

PLANT-LORE, LEGENDS, AND LYRICS.*

A FEW years ago gardeners were contented with knowing something about the few plants that were useful for bedding-out purposes, but the present more wholesome fashion of growing anything and everything that is ornamental has led to one result that could have been anticipated only by those who studied and cultivated plants in the widest range possible to them. The result we mean is a large crop of books dealing not merely with the botany or the cultivation of flowers, but with their literary and historical association, their poetry, and legends. During the last ten years there have been many such books, but long before that the old gardening authors delighted in such bye-paths in their favourite pursuit, while many readers of *THE GARDEN* will be old enough to recollect how much was collected in this way and published by Brand, Hore, Miller, Foster, and many others. The subject is really almost inexhaustible, and therefore we are not surprised that Mr. Folkard has been tempted to add yet another work to the many already published during the last ten or fifteen years. The book is daintily got up, and to those who have not other books on the subject it can be thoroughly recommended as a very full and trustworthy account of the "myths, traditions, superstitions, and folk-lore of the plant kingdom."

The title is rather misleading. Plant-lore means the knowledge of plants, but Mr. Folkard tells us little or nothing of the botany, structure, habits, or cultivation of the many plants he names, and very little of their geography. Of "legends" he has abundance, but of "lyrics" he gives a very limited selection. Assuming that he means the poetry connected with plants, his quotations are chiefly confined to translations from Ovid, to Ropin, and such-like authors, while of the old English poets—Gower, Chaucer, Spenser, Shakespeare, Milton, Jonson, &c.—he seems to know very little; and the modern poets whose pages are so full of flowers, such as Wordsworth, Tennyson, Shelley, and Browning, he entirely omits. The work, therefore, is by no means exhaustive, yet it contains 600 closely-printed pages, many of which must be classed as "padding." The book is divided into two parts, the first containing sixteen chapters on plants under various heads, as sacred plants, fairy plants, Christian plants, fabulous plants, plants and planets (in which he omits all mention of Gower's elaborate description of the planets, with their appropriate plants), funeral and bridal plants, &c., while the second part contains a sort of dictionary of about 600 different plants arranged alphabetically.

The book is full of legends and curious histories, but the author is evidently so much at home here that we regret he did not make a selection of the better myths, and still more that he did not (as we feel sure he could have done in many instances, perhaps in nearly all) trace the growth of the myths from the first germs of truth to the fuller developments which they gradually attained. We know well the attraction that such myths have upon collectors of them, but we have now passed the stage of mere collection, and we now recognise the fact that the old writers were neither knaves nor fools, but generally built up an imaginary structure from a perfectly sound foundation. As instances of what we mean we may quote the well-known and much-derided accounts of the barnacle geese and the vegetable lamb. In their late developments the accounts of these creatures were tissues of falsehoods, but they sprang originally from ill-observed specimens of real creatures, and the earlier accounts are not very far from the truth. Mr. Folkard quotes freely from Mandeville and Gerard (whose name he spells wrong throughout), but he seems unacquainted with the vast amount of plant-lore to be found in our Anglo-Saxon and early English herbals.

* "Plant-lore, Legends, and Lyrics." By Richard Folkard, Jun. Svo. London: Sampson Low & Co. 1884.

The second part (the dictionary) contains 600 names of plants, with long accounts of several of them, but it is not easy to see on what principle any plants were admitted or excluded. Latin, English, Greek, and Indian names are all used indiscriminately, and are mixed up together in a very queer manner. Thus we have our common wayside Good King Henry between such unknown plants as Golubetz and Gool-Alchin, while our old favourites King's Cup and Knotgrass are preceded by Kerzereh and Ketakia, and followed by Koidara, Kounalnitza, Kuddum, Kusa-grass, and Kushta, names entirely unknown to English botanists. Of course in a universal dictionary of plants such names might perhaps find a place, but they have no claim to a place in a selected list of only 600 plants, supposed to be more or less familiar to the ordinary reader.

We have noted a few points for short comments. In page 216 the author says: "In 'Midsummer Night's Dream' Oberon bids Puck place an Anemone flower on the eyes of Titania." Shakespeare nowhere names the Anemone; he bids Puck place 'Dran's bud,' which can only be the bud of the plant sacred to Artemes, the Artemisia, or Wormwood. Chestnut should always have its middle "t" to show its connection with the Nux Castanea; Mr. Folkard's spelling "Chesnut" gives the false connection with cheese. The generic name of Aquilegia for Columbine is most probably not from Aquila, but from Aquilegus, a water collector.

The book has good indexes, but though occasionally an author's name is given, there is scarcely a reference throughout. Where a book is composed by a compilation from many authors, the entire absence of references is a very serious omission.

PARKS & PUBLIC GARDENS.

FOOTPATH PRESERVATION SOCIETY.

A PRELIMINARY meeting to inaugurate this society lately took place at its temporary offices, 6, Fetter Lane, Fleet Street, Mr. W. P. Freeland in the chair, who having briefly opened the proceedings, called upon Mr. Allnutt, the promoter, to state his views on the association. Mr. Allnutt then explained at some length the objects of the society, viz., to preserve to the public foot and bridle paths, also all rights of way by land and water, vacant spaces, such as village greens, &c. The society will also advocate the purchase of land near towns and villages for public recreation grounds. The society was to be a central society from which branches should be established at various towns all over the country. At Henley, Reading, and Birmingham there were already local societies in existence; but in many places where footpaths were encroached upon no protective organisation existed, and this want the present society proposed to meet. The Rev. J. M. Taylor said that it was most important to preserve to the public the numerous footpaths in the country. Footpaths, he said, were continually meddled with by landowners, and there was a frequent tendency to narrow them until it was an impossibility to walk through a field of corn without brushing the Wheat on either side. There ought to be a 4-foot track, but farmers and others in many instances ploughed up the footpath so that it could not be defined. He did not know if there was a specified width to which footpaths should extend. Mr. Hugh Browne said that one of the objects of the National Footpath Preservation Society was to get a settlement of that question by obtaining a minimum width fixed by law. The Rev. J. M. Taylor then spoke of a labourer in Buckinghamshire who when going through a field of Wheat on a public footpath got wet up to his thighs; he straightway returned home and obtained a sickle with which he cut the Wheat right across the whole field until the footpath was wide enough to walk over without a person getting wet through. The farmer summoned him, but the magistrate said that the defendant was perfectly

right, as there should have been sufficient room left for him to have gone through the field, and not a mere hare track. Mr. Taylor then spoke of the value of footpaths in his locality, his parish being very much scattered, and stated that it would be a great boon to the poor if the existing footpaths were properly defined. Mr. Allnutt remarked that the paths should not only be shown on the ordnance maps, but a description of them, which he thought was of equal importance, should be printed. Mr. Hugh Browne, solicitor, Nottingham, said he thought the difficulties for the society to overcome were twofold, viz., bad law and bad administration of bad law. He described the efforts of a landed proprietor to stop a footpath near Newstead Abbey in which he was eventually successful, and stated that such attempts were constantly being made in the country with, in the main, equally successful results. A society like the National Footpath Preservation Society would unite the scattered efforts of those who stood up against these practices. It should be made known throughout the country that wherever there is an infraction of the law by the stopping of footpaths the law will be appealed to.

INDOOR GARDEN.

VENTILATED FLOWER-POTS.

SURELY Mr. Crute (p. 304) must have been ill advised to invest in a patent for a flower-pot that has in principle, and as nearly as possible in shape, been in existence for many years. It must be quite thirty years, I think, since what were called Heath pots were common in Scotland at least, and these pots had raised bottoms, holes at the sides, and were nearly as wide at the bottom as at the top, as most Scotch pots are now. Some years ago I pointed out in *THE GARDEN*, in a discussion on the sizes of pots for Vines and Pines, that 10-inch Glasgow pots were equal to the 12-inch ones usually made in England, owing to their being straight-sided. Mr. Crute's patent has also been anticipated by various makers in other ways. Pots with several drain holes flush with the bottom and a groove from the centre hole to the sides are common enough, and have been for years. Some of the advantages claimed by Mr. Crute for his pots are purely fanciful. They will not, for example, prevent worms from entering the bottom, but as a matter of fact will facilitate their ingress, for whereas a flat-bottomed pot with only one hole does prevent worms from getting in, except from one direction, Mr. Crute's pots admit them on all sides. Any man who has ever carried a tin of worms in his pocket on a fishing excursion knows how worms will crawl up the smoothest surface if they wish to do so. As to ventilation, the fault of a porous earthenware pot is that it is too much ventilated already. Ventilation in the sense provided by Mr. Crute's pot is not needed in the least, but, on the contrary, gardeners reduce the ventilation whenever they can by plunging their pots up to the rims in earth or something else, the amount of air that plays around and in a flower-pot exposed being one of the worst evils connected with its use. In fact, double pots have been invented to provide against this very evil when the pots could not be plunged. The idea that any plant in a pot needs ventilating from the bottom is only one of those fanciful notions that sometimes originate in the brain of non-practical people, but have no foundation in practice. One hole in the bottom of a flower-pot is ample, and if the bottom of the pot be grooved or elevated by a shallow rim, like the Heath pots just mentioned, no more is needed; to elevate the bottom like the bottom of a champagne bottle, as shown in Mr. Crute's sketch, is only to encroach needlessly on the rooting space. A flat or very slightly dished bottom with a hole in the centre answers every purpose, because the condition of the roots depends on the drainage, which, no matter what the bottom of the pot is like, must be effected by means of crocks or stones laid carefully above the holes.

S. W.

LIVISTONA AUSTRALIS.

UNDER the name of *Corypha australis* this Palm has long been cultivated because of its ornamental characters, both when small and when grown to the dimensions of the specimen represented in the adjoining woodcut, and which is now growing in the Jardin des Plantes, Paris. In botanical gardens, and especially in the Royal Gardens, Kew, *L. australis* is to be seen as large and as luxuriant in health as it ever is in the woods of Tropical Australia where it is a native. We owe the introduction of this useful Palm to a somewhat novel circumstance. In his "Popular History of Palms" Seemann says: "When Allan Cunningham, the king's botanist, was in New Holland, he sent a case with living plants to the Royal Gardens, Kew, which on being disturbed was found to have, instead of the crocks usually placed at the bottom of such cases for drainage, seeds of a Palm, nearly all in process of germination. Cunningham's attendants, too indolent to look for the crocks, had substituted the seeds of the *Livistona australis* which happened to be more handy. These young plants

*Livistona australis.*

were carefully nursed, and one of them has now become one of the gems of the collection of Palms at Kew; another adorns the chief conservatory at the Royal Gardens at Hanover; and again another at the Crystal Palace, at Sydenham." Since Seemann wrote, the Kew specimen has been removed, owing to its having reached the top of the Palm house. This was, however, replaced by another which in its turn will have to be sacrificed, owing to its height. *L. australis* is a fast-growing Palm, soon developing into a noble tree, as is seen in the size of the Kew specimens, several of which rear their massive heads of shining green fan-shaped foliage, supported on straight cylindrical rich brown stems, high above the other Palms. For decorative purposes and for cultivation in small stoves this Palm is, when young, one of the best and most useful. This, along with another equally useful Palm, viz., *L. chinensis* (*Latania borbonica*), is grown in thousands in Continental nurseries, and a large proportion of these are annually imported by London nurserymen to be sold to the decorator, &c. Very young plants in 6-inch pots of *L. australis* make good table plants, their little hand-like leaf blades, supported on semi-erect, prickly stalks, and so arranged as to form a graceful pyramid of dark green foliage, being effective when thus employed. *L. chinensis*

is a little straggling, or, as some say, ragged, when in a small state, and is not therefore perhaps quite so useful as the other, at least for table decoration. All the *Livistonas* are, however, really serviceable garden Palms, all being palmate, graceful, both when small and when large, and hard enough to stand a good deal of rough usage with impunity. Seeds are imported in plenty from various tropical countries, where these Palms are now established and fruit freely, and these soon germinate if sown in a warm house, after which liberal treatment in the matters of soil, water, and warmth will soon make the seedlings into plants of useful size, when they should be gradually hardened off, so that if desired they may be used as greenhouse plants, or for the decoration of rooms, &c.

In the "North" Gallery at Kew there are two groups of *L. australis* represented in pictures Nos. 549 and 582. B.

Chrysanthemum Lady Selborne.

This variety of *Chrysanthemum*, grown in the way about to be described, is one of the best we have for early blooming. Its pure white flowers are highly prized in a cut state, and its free blooming habit combined with its earliness make it doubly valuable. Just now it is in good condition, and will continue so for another fortnight, when we shall have plenty of others in bloom to take its place. Cuttings should be struck early in January, either in heat or in a cold frame, as may be thought best. When rooted and commencing to grow pinch out the points of each and allow three shoots to each plant. These in time will branch into three more, and the nine shoots thus obtained should be carefully tied to stakes; all side shoots should be pinched off, leaving the centre bud to each branch only. Pot in good, rich soil, water freely when necessary, and use liquid manure two or three times a week during summer, when the pots in which they are to bloom, which should be 9-inch ones, are full of roots. They should occupy a free, open position out of doors during summer, but as soon as the flower buds show colour, or earlier if required very early, they should be placed in a greenhouse or vinery and given plenty of air, when they will soon produce blooms of snowy whiteness, which will be much appreciated.—E. MOLYNEUX.

A cottager's Lily.—I read with interest the account of a cottager's Lily given in THE GARDEN (p. 200). Permit me to give an account of one that has been grown here and looked after by the gardener's wife (Mrs. Day). It was given to her by a friend in the autumn of 1882, and was potted by the gardener in a 24-inch pot in a compost of half yellow loam, quarter peat, and quarter leaf-mould, adding a little cow manure and a good sprinkling of silver sand. It was watered and placed in a cellar in the gardener's cottage, where it stood all winter. In spring it threw up a strong spike. It was gradually brought out of the cellar each day (weather permitting) and taken in at nights until all signs of frost were over, when it was put out altogether, and it bore eleven good flowers on one spike. In the following winter (in December) it was again potted in a 10-inch pot, using the same compost as before. It was watered and placed in the cellar again, where it remained until spring. When it commenced to grow it was again set out of doors each day, and taken in at night until the weather was sufficiently favourable for it to stand outside altogether. This time it threw up two spikes, and when about 1 foot high it was given a top-dressing of fibrous peat and kept well watered. It this time produced eighteen fully expanded flowers; six were on one spike and twelve on the other. Several of them measured 11 inches across, and they were finely marked. From the bottom of the pot to the top of the largest spike is 5½ feet—quite enough, I think, to convince anyone how easy it is to grow a fine Lily to perfection without the aid of a glasshouse. This plant never received any manure water.—A. HAWKES, *Casino House, Herne Hill.*

Detached greenhouses.—A decision has been given by Mr. Hosack, in the Worship Street

Police Court, which will interest the owners of suburban villas. The district surveyor for East Hackney (North) summoned a gentleman for a fee in respect of a detached greenhouse, 16 feet long and 9 feet wide, which had been erected in a back garden. The magistrate said that he would allow that a greenhouse attached to a building was not exempt, but thought one which was detached, as in this case, was exempt, and therefore dismissed the summons. District surveyors will not approve of this opinion, but from an occupier's point of view it is satisfactory. The small greenhouses which are found in the gardens of London houses are often so simple, that they hardly deserve to be called structures. But, like fowlhouses, they have been brought within the terms of the Building Act. We know of a case where the flue in a small greenhouse, entirely constructed by an amateur, was treated by a surveyor as if it were a factory chimney; and many similar cases could be related.

FRUIT GARDEN.

LARGE V. SMALL BUNCHES OF GRAPES.

No gardener, or employer either, I imagine, objects to large bunches of Grapes, provided they are of good quality. Bunches that are large, well coloured, and well flavoured cannot, I think, be regarded as anything else than examples of high culture, and they ought to be rewarded accordingly. I do not think the plea of their being less useful than small ones can be sustained under such circumstances; but the fault of sensational bunches is their inferior quality. As a rule, they are neither well coloured nor well flavoured, and to all the sensationally large bunches that have been exhibited these faults have been common. Some of them have been quite inferior in every respect except size; so much so, that when opposed to good but small bunches at exhibitions they have generally been passed over altogether by the judges; in fact, I cannot recall an instance of the large bunch growers competing successfully in the "single dishes," a class in which the cultivator's strength is tried more severely than anywhere else. All the monstrous bunches of Black Hamburgh have been badly coloured, small in berry, and not well flavoured, and white Grapes have not been much better. The problem interesting to gardeners is, "Why should large bunches be of inferior quality?" Somehow or other the colouring matter never seems to reach their extremities, even under the most favourable circumstances, and the bigger the bunch of course the worse the finish. If there be an ill-finished bunch on a Vine, it is almost sure to be the largest. This is a fact to begin with, and seems to go to show that a Vine shoot or branch may produce a monstrous bunch which it cannot really ripen perfectly, just as the Vine under artificial culture does produce constantly far more bunches and berries than it can carry to the end; hence the custom of thinning both severely in every case, and it follows that to get large bunches to finish properly they should be reduced in size by the cutting away of their extremities, for it appears that a reduction of the number of bunches on the Vine does not enable those left to ripen perfectly, even when the number of bunches on a Vine has been reduced to one or two. Another thing is that large bunches can only be produced by very strong Vines reared on very strong food, and hence probably not well ripened annually, nor of sound constitution, a fact borne out by the circumstance that such Vines are either notoriously short-lived or soon enfeebled, as their history goes to show.—S. W.

Many will doubtless agree with what "J. G. H." has advanced upon this subject (p. 319), but for my part I am inclined to think that he is not altogether correct in his ideas concerning the greater superiority of a crop of medium sized bunches over excessively large bunches. It may be such is the case with him, but if he had some employers to please he would find the reverse to be the case, i.e., he would find that fine bunches, if much fewer in number, would give the greatest

satisfaction. It seems to me that employers have of recent years taken much greater interest in all matters pertaining to their gardens than they used to do, and not only pay frequent visits to the kitchen garden, in which the fruit and plant houses are generally located, but also take every opportunity of bringing their friends to see their fruit and flower treasures. Moreover, I find that there is also much less objection to occasional visits being paid by their more humble neighbours or amateurs, who like to see what is being done at the castle, hall, or house, as the case may be. Now it happens that anybody can grow small bunches, but it is not such an easy matter to secure excessively large ones. All will admire a crop of medium-sized, well finished bunches, but they do not excite the onlooker. They are "very good," some would say, but it is the adjective "grand" that best pleases, and which for my part I should always feel proud to hear expressed about a crop under my care. Not only do employers like to see fine bunches hanging on the vines, but they are also very proud of them when placed on their tables. They furnish a topic for conversation, and many will even sacrifice quality to appearance, this with many fruits perhaps being a mistake, though as far as Grapes are concerned there is no reason why they should not be both large in bunch and good in quality. Even the noble-looking Gros Colmar can be ripened to perfection if started early and be given a fair amount of fire-heat, some I have tasted this year being quite equal to Black Hamburg. Black Alicante bunches well finished and weighing, say, about 4 lbs. look particularly beautiful both on the vines and the dinner-table, and these, too, may be fairly good in quality if ripened in heat or along with Muscat of Alexandria, the bunches of which cannot well be too large, and such large bunching sorts as White Tokay, Calabrian Raisin, and Gros Guillaume look remarkably well on the table, and when in season are not to be despised when their turn comes to be eaten. I say their turn comes to be eaten, as these fine bunches are rarely cut up when first put on the table, but do duty for perhaps two or three nights. In such cases dishes of Grapes cut into small pieces are set on the side-board and duly handed round to the company present. What "J. G. H." has to say upon the necessity or

ADVISABILITY OF SHORTENING THE BUNCHES is, I readily admit, most instructive, and should commend itself to many readers who from choice or necessity crop heavily, as in such cases there is no doubt the plan of shortening the bunches or selecting medium-sized ones is a most commendable one. Better do it in the first instance than later on, when perhaps the points are shanking and the vines weakened from the effect of trying to perfect a too heavy crop. Medium-sized bunches are also the easiest to pack, and being also very frequently the most compact, are the best travellers. They are also to be preferred where it is the custom to send in a certain number of bunches each day, what is left of these being eaten perhaps by those who have no right to them. After all has been said, however, it is a question of judgment on the part of the grower. What should first be determined is the weight of Grapes the vines are capable of properly finishing, and this weight may be divided among so many large bunches or double the number of smaller ones. The mistake which so many of us have made in the course of our gardening career is to attempt to finish too many large bunches, or a greater weight of Grapes than should reasonably be considered to be a crop. In that case we must either shorten the bunches and reduce their shoulders or severely thin out the bunches. It is quite possible to have compact large-berried bunches of Muscat of Alexandria fully 15 inches long, and with shoulders nearly as much across, such, for instance, as many of those now hanging on the vines at Longleat; but the vines must not be over-cropped that are to perfect these. Does not "J. G. H." rather malign exhibitors when he asserts that they "set a high value on a few monstrous bunches?" Were the twenty beautiful bunches which gained Mr. Wildsmith the premier prize at the recent

Grape competition at South Kensington monstrous in any sense of the word? As it happens, this collection was selected from a great number of bunches only slightly, if at all, inferior, and "J. G. H." would have done better to have alluded to this instance of superior culture as being a good example of the superiority of the finish of medium sized bunches than attempting to prove that exhibitors were mistaken in their ideas as to the best class of bunches to be grown. It is quite possible for exhibition bunches to be large without being monstrous, and for such bunches to be perfect in every respect without any shortening. There are times when the bunches may be much improved in appearance by having the shoulders materially reduced, and in a few instances the bunches may well be slightly shortened, though I never yet saw a bunch of Mrs. Pince's Muscat that required shortening to improve its appearance, or which might not have been perfected its full length. — W. I. M.

MANURE FOR FRUIT TREES.

THE planting season being now at hand, a few remarks on preparing ground for fruit trees may be acceptable to those who are halting between two opinions, or what may be termed the new and old systems of fruit culture. The old system taught us in our young days that giving manure to fruit trees was a dangerous practice, but everyday experience proves the contrary. Never under the starvation system and hard cutting in of the branches was such collections of fruit seen as are now shown at our exhibitions, and from personal experience in the gardens that produce the finest collections of Apples, Pears, and other kinds of fruits, I know that good short stable manure is used in unlimited quantities; in fact, walking between the rows of trees seemed like walking in a farmyard. Yet we still hear many who contemplate planting fruit trees quoting the old theory that manure promotes all sorts of ailments. But what are the facts? If we visit any of the large nurseries in which the thousands of fruitful young trees annually sent out are produced, we shall find large stacks of rotten manure at this time of year ready to be dug into the quarters in course of preparation for young stock; we find, too, the trees in spring bristling with flower-buds, and in autumn producing fine crops of fruit. Apples in fruit tree nurseries thus managed bear good crops when two years old; therefore the old maxim respecting planting fruit trees for the next generation to reap the benefit is no longer tenable. In preparing a site for new trees let the soil therefore be not only deeply cultivated, but liberally enriched with thoroughly rotten manure, and if the position has been long occupied by old fruit trees, wheel out a good proportion of the exhausted soil, and replace it by fresh material from other parts of the garden. Turf and top-spit pasture soil are not always available, but this need not matter, for any good soil that grows vegetables well will grow fruit trees to perfection, provided its fertility is kept up by annual dressings of manure, a little and often being a good maxim in this matter. If we consider the weight of crop which a fruitful Apple tree produces, it is evident that the soil must soon become exhausted, and if this is not made good the roots will strike down into the cold subsoil, and watery, unripe, and consequently unfruitful shoots will be the result. It is by keeping the roots actively at work near the surface, where the sun's rays can act on them, that the modern fruit grower gets young trees to be so fruitful.

THE KIND OF MANURE that I have seen most extensively employed for fruit trees with good results is such as one finds on market gardeners' homeward-bound waggons, and which is mainly composed of stable manure with more or less of every conceivable kind of town refuse. This is stacked in heaps and turned over once or twice until it is thoroughly decomposed, when it is fit for use, and for healthy, fruitful trees there is no artificial compound new or old that I have yet tried equal to it. In the case of new plantations the main thing is to have the manure thoroughly

mixed with the soil, and for this purpose steel forks are better than spades, and with from 2 feet to 3 feet of good friable soil moderately enriched with good manure the trees will not be so easily affected by adverse seasons as they often are; their vigorous nature will carry them safely through visitations of drought or wet that would prove fatal to those in a weakly, debilitated condition.

TOP-DRESSING or mulching the soil with manure has of late years been most successfully carried out. By this plan of annually adding a little fresh food in the shape of a top-dressing, the active rootlets find something congenial close to the surface, for the worms draw it in and the rains wash down the nutriment, so that there is little difficulty in keeping up the fertility of trees when once properly started. But we frequently meet with trees that have been thrust into small holes in hard, half-prepared soil; such trees yield but very indifferent crops, mainly because the surface roots have perished from neglect to supply them with food; consequently a few large coarse roots have struck down into the cold subsoil with, as I have said, the result that the shoots are gross and watery, and fail to ripen or produce flower-buds, or if they do flower and produce fruit it never finishes off well. Canker follows unripe wood, and severe frost splits the watery tissues, while hard, well-ripened wood passes safely through the ordeal. This is the time to take such trees in hand. Open a good-sized trench from 2 feet to 3 feet from the stem of the tree according to its size and age; large old trees require more space than younger ones. Dig down two spits deep; cut any large, thong-like roots, but carefully preserve all fibrous ones. Then proceed to undermine the ball of earth, cutting off the roots that strike down perpendicularly. Ram the soil in again as firmly as possible; then proceed to fill up the sides with the loosened soil, enriched with some thoroughly decomposed manure and some of the surface soil from the vegetable quarters, spread out the fibrous roots, and cover them with fine soil; tread the whole quite firmly, and finish off with a good barrowful of manure spread on the surface. If anyone who is not satisfied with the result of letting the roots take care of themselves will try more liberal diet, they will soon find a marked improvement both in the trees and their produce. J. GROOM.

Gosport, Hants.

LEAF FALL UNDER GLASS.

I DARESAY many besides myself have noticed that Vines and Peaches that are forced early under glass retain their foliage much longer than those grown in later houses. For example, I have seen Vines started in January retain their foliage long after the fruit was cut and as long as Vines started two months later, the leaves falling in both cases when the cold weather came. Our second early vinery, although the wood was quite ripe and hard in June and the crop cut in July and onwards, long after it was quite ripe, still carries fine green leaves, but hard, leathery, and ripe, and they will not now fall any sooner than the later Vines, unless the Vines are pruned as they are. In our Peach house it is just the same. We gathered the fruit in May and June, and have done so for years, and the wood was quite ripe and hard shortly afterwards, the buds plump, and growth at a standstill, but the leaves are still on the trees, and the only difference between them and those in the later houses is that the leaves fall off in showers if the trellis is shaken in the case of early trees, showing that they are quite ripe. The reason of the leaves remaining on so long is, I have no doubt, simply the temperature, which sustains their vitality. I have noticed many a time that when we experience one or two chill nights in August or September the leaves in our early vineries and Peach houses turn yellow quite suddenly and fall off in the natural manner. Just the same thing happens in the case of the trees out-doors. If the autumn be mild the leaves hang long, but a night's cold or frost turns them yellow at once and brings them down in showers in a

couple of days. The question is, does the long duration of the leafage work good or harm on forced fruit trees? and would it not be just as well to prune when the wood is thoroughly mature whether the leaves are there or not? or do by the hand what the cold would do—pull the leaves off and let the Vines go to the rest they need? I certainly like Vines to have a rest after pruning of at least six weeks or two months, yet I have seen unpruned early Vines that were started the November previous begin to grow early in August from the points of the laterals after being at a standstill (but before all the leaves had fallen), most of the summer pruning having been delayed to prevent the buds proper from starting too soon. In other words, Vines started at the natural season, about April, will cast their leaves in October or November quite ripe, and Vines started some months earlier will not cast them much, if any, sooner. The latter, I think, however, are not benefited by leaves remaining on so long, although they may do no harm. Their existence is only prolonged by heat and exercises no influence upon the wood and buds. S. W.

5251.—**Blackberry jelly.**—Put 10 lbs. of ripe Blackberries and half-a-pint of water into a covered jar, and put the jar in a gentle oven for four or five hours or till the fruit is quite soft; then ladle all into a sieve on a basin, and allow the juice to run through without pressing. Weigh the juice, and boil it for three-quarters of an hour in a preserving pan. Remove the pan from the fire (a gas stove is the best), and add three-quarters of a pound of white sugar to every pound of juice; when the sugar is all melted, replace the pan on the fire, and boil gently, stirring constantly, till a teaspoonful will set when left to cool on a plate. This should be in half-an-hour. Ladle into jars, and the next day put on brandy papers and tie down. This jelly will be quite firm, and keep for three or four years in a dry place. The Blackberries may be simmered on the fire till soft, but the oven extracts the juice best. —C. P. G. M.

—The following recipe for making Blackberry cheese or jelly has been sent to us by Col. Stuart Wortley: Boil the fruit first, then work it through a sieve, then add three-quarters of a pound of lump sugar to one pound of the strained juice. Boil this for three-quarters of an hour over a clear fire, stirring it all the time, and keeping a close watch over it, or it may burn; then put it hot into glass bottles which have been well heated, and it will keep good a long time.

—If "Adolescens" is a beginner at preserving, the best way is to put weight for weight at first, but many put three-quarters of a pound of sugar to every pound of fruit, and have always a good preserve. Respecting the time of boiling, although we always look at the time when it begins to boil, we have no stated time. When we think it looks ready to come off the fire, we put a small quantity on a plate, set it in a cool place, and in a few minutes, if boiled enough, it will have a thin skin over it, and, if properly managed afterwards, will keep for years. Blackberries make one of the most wholesome preserves that can be made; they are gathered in large quantities in this district for the market. This year they fetched from 3½d. to 4d. per lb.—A. H.

SHORT NOTES.—FRUIT.

Wasps among Grapes.—If your correspondent will grow a few plants of Tomatoes among or in the house with his Grapes, wasps will not go near the house.—BELFAST.

New Peaches.—Colombier and Alexis Lepère are seedlings raised by M. Lepère, of Montreuil, and are said to be of great merit. President de Paris, raised by M. Defresne, of Vitry, and about to be distributed, is also declared to be of fine appearance and good.—J. C. B.

Strawberry Vicomtesse Hericart de Thury.—There can be no doubt as to the value of this variety for outdoor culture. A cottager here has a plantation of it which has borne abundantly four years in succession, and the plants are now so large, that a bushel basket would not cover them individually. No other kind lasts and fruits in this way in our district.—J. C. B.

Brockworth Park Pear.—The few fruits which we have had of this Pear this season have been both large and handsome, and in flavour nearly, if not quite, equal to that of Williams' Bon Chrétien. Every fruit came perfect in outline, which is quite characteristic of this Pear; it is always in a presentable condition. Unfortunately, it is an uncertain bearer, although the tree grows well; the uncertainty is doubtless owing to its flowering early, for whether grown as a pyramid or trained to a wall it is the first to expand its blossoms, a circumstance which exposes it to the severest of spring frosts.—J. C. C.

* * The above Pear is an old French Pear, the proper name of which is Bezi de Mai.—ED.

Foxy Grapes.—"A Third Scot" (p. 273) has, I think, hit on a very fertile cause of foxy Grapes and the means by which they are generally produced; but with regard to their flavour, I have heard practical men of large experience say that Red Hamburgs were better flavoured than Black ones. My opinion, however, is that this arises from black Grapes being often used as soon as black; whereas red ones are permitted to hang much longer in the hope of their ultimately turning black. Overcropping is a very common cause of foxy Grapes. Twenty-five years ago I served as second gardener under a good practical man, and during the time I was with him we thoroughly renovated a very old Vine that filled a large house by lifting the roots, making a new border, and cutting out the old wood of thirty and forty years' growth, laying in a quantity of young rods—one, in fact, to each rafter of the house as before. The work of renovation was well done, and when fruiting time came a moderate crop was left on each rod. The result was some nice compact bunches as black as Sloes. After two crops of well-finished Grapes had been produced, the gardener who renovated the Vine left, and his successor, a man of very limited experience in Grape growing, left on the Vine nearly all the bunches that formed, two and three being on a shoot. The result was a fine Vine and house of Grapes spoilt. The Grapes were foxy, and it took the Vine several years to regain its vigour.—R. M. Y.

Ripening the wood.—It is seldom we get such a glorious time as that which we have been having for ripening the wood of fruit trees. The sky through the whole of last month was clear and the sun hot—just the proper conditions for hardening young growth and plumping up and maturing the flower buds. That these will be abundant is now manifest; they may be seen distinctly, and though no one can be sure that we shall get a crop next year, it is certain, even thus early, that we shall have a great show of blossom. Ripe wood has much to do with strengthening the organs of flowers, and, judging from remarks made, some evidently think that it enables them to stand a greater amount of cold. Ripe wood means perfectly finished buds, and except they reach that state, anthers and stigma are not properly formed and developed, and if there is any defect in either, fruit cannot set. In order to aid ripening, all superfluous shoots should be removed from Peaches and Nectarines, as now when the trees have nothing on them they can be thinned, and nearly all wood cut out that is not required for laying in and fruiting next year. By doing this, both light and air will be let in amongst the foliage, and the entire strength of the tree forced into the remaining branches and buds, the latter of which will then fill up and mature. It is too late now to do much to benefit Apples and Pears, but if any shoots have been left standing out from the spurs, they should be taken off in order that the slow-flowing sap may be forced into the parts where it is wanted.—S. D.

Blackberries in Ireland.—During the last fortnight I have, says a writer in the *Morning Post*, visited the south of Ireland, including Cork, Queenstown, Mallow, Killarney, &c. In the little excursions I have made from these towns into the country I was struck with the superabundance of

what might be a source of great wealth to the poor people of these districts, namely, the splendid crop of Blackberries, which along the hedges and waysides are so abundant as to absolutely weigh down the hedges upon which they grow. On making inquiry I found that this wholesome fruit is not utilised or gathered, but allowed to ripen and rot, and thus a large amount of food is lost. I am within bounds when I assert that thousands of tons might be gathered for preserving and making into jam. The jam and jelly of the Blackberry is not only valuable as an article of food, but is invaluable medicinally made into a tea in cases of cold, sore throat, diarrhoea, and other complaints. With sugar at 1d. per pound, or so low in price that it is suggested that it might be advantageously substituted for oil-cake in the feeding of cattle, I do think it is sinful to allow hundreds of thousands of tons of fine Blackberries, which cost nothing but the gathering, to perish at our very doors, when we are sending millions of money to other countries for fruit which is not half so wholesome and delicious.

Fraud at fruit exhibitions.—According to the report of the Dundee show in a contemporary, one of the "leading exhibitors" attempted to impose on the judges by tying two bunches, or pieces of bunches, of the Duchess of Buccleuch Grape together to make the bunch of sufficient weight. I can well believe in such practices if the following be true, which I had two days ago quite inadvertently from one of the parties concerned, and which relates to a leading exhibitor. My informant called here to have a look round, and in going through our Peach houses observed that they had had a fine crop this season, adding that "I would probably see them at the great show, as it was his Peaches Mr. — showed in his prize collection." "Do you mean to say," I asked, "that it was your fruit which he showed instead of his own?" and the reply was, "Yes. Well, you know it is often done; he once lent me Pears in the same way." One of the parties is gardener to a lord and the other to a wealthy esquire, and one of the two at least had less occasion than most gardeners to resort to such practices. The names of the parties astonished me, and seeing this my informant said, "Perhaps I had better have said nothing about it," but the information was given unasked before two others. I therefore declined to consider it private, and the parties will no doubt guess who your informant is. It is evident that where such practices prevail, any unscrupulous exhibitor with one or two good centre dishes of his own to begin with may easily supplement the rest from other sources and defeat any honest opponent. It was remarked at the show in question that in the collection containing the borrowed Peaches every dish of fruit was of remarkable excellence, as well it might be if there were many of them procured in the same way as the Peaches.—CORRESPONDENT.

5246.—**Wasps' nests.**—I should advise Mr. Verney (p. 244) to destroy all the wasps' nests to be found within a quarter of a mile of the Elm trees which he wishes to preserve. I have destroyed thirty-eight wasps' nests this season in a most effective and economical way, all within a radius of 300 yards. At one time they seemed to threaten the destruction of all Plums, Pears, and Grapes; in fact, everything that came in their way. Hanging bottles up and other traps is worse than useless; they get full of butterflies, moths, bluebottle flies, &c., but few wasps. My plan is to search for their nests and destroy them by means of boiling water. Do not pour the water down the hole or the entrance to the nest, but simply stop the hole up and probe with a spade until the nest is found; then empty about two gallons of hot water on the by this time savage foe. Wasps, grubs, and everything will be thus scalded in an instant. A little stratagem must be used even in storming a wasp's nest, for they are at times most determined opponents. I have taken or destroyed, as I have said, thirty-eight nests, and received very few stings indeed. In

one nest I had the curiosity to count the mature wasps, and found the total to be over 4000, besides the young grubs or brood in all stages of growth from the egg upwards. Wasps are unusually numerous this year. A neighbour of mine has had the pleasure of seeing his Grapes getting beautifully less, three-fourths of his crop having gone to feed the young wasps. Mr. Verney's case of wasps eating galleries into the stem of a tree is one of extremely rare occurrence, though I have known hornets gnawing holes through the bark of Elms in order to obtain an excretion which seemed to be a source of great attraction to them. —HY. DOBBIE, *Thickthorn, Norwich*.

—To destroy wasps, get 3 ounces cyanide of potassium; dissolve it in a quart of water, saturate a piece of tow or cotton wool with it, and put it in the entrance to their nest, when all that are inside will be killed, and all that approach the nest will share the same fate. We have tried this plan, and have found it to be effectual. —X. Y. Z.

PREPARING SPECIMENS FOR HERBARIA.

WE are frequently asked for information on this subject, and as the preparation of perfect specimens entails much care in selection and drying, the following instructions may prove useful. A botanical specimen to be perfect should have root, stem, leaves, flowers, and fruit. It is not, however, always possible to gather such complete specimens, but the collector should aim at completeness. Fragments, such as leaves without flowers or flowers without leaves, are of little use. If the plant is small the specimen should consist of the whole plant, including a portion of the root. If it be too large to preserve the whole, a good flowering branch should be selected with the foliage as low down as can be gathered with it, and if the radical leaves differ a few of them should be included. For bringing the specimens home a light portfolio of pasteboard containing a few sheets of stout, coarse paper and furnished with straps is better than the old-fashioned tin box (except, perhaps, for stiff, prickly plants). The specimens as gathered are placed between the sheets of paper, and may be crowded together if not left too long before sorting. A note should be taken of the date, place, and situation in which the specimen was gathered; also of particulars which it does not supply, such as habit and stature in the case of trees, shrubs, &c. These memoranda should be written on a label attached to the specimen and preserved with it. In drying specimens they are laid flat between several sheets of bibulous paper and subjected to pressure. The paper is subsequently changed at intervals until they are dry. In laying out the specimen the natural position of the parts should be preserved as far as consistent with the laying it flat. Bushy specimens may be thinned, and thick parts, such as the head of a Thistle or bulb of a Lily, may have their under side sliced off before drying. Succulent specimens, such as Sedums, Orchises, and other plants that are tenacious of life, may be dipped in boiling water all but the flowers. This will kill the plant at once, and enable it to be dried rapidly. Heaths and other plants which are apt to shed their leaves during the process of drying are best dipped in boiling water before being placed in the drying paper. The paper ought to be coarse, stout, and unsized, and the more and the better the paper used the less frequently will it be necessary to change it, and the sooner the plants will dry. For pressing plants, all that is required is a pair of boards the size of the paper, and a stone or heavy weight upon them if at home, or a pair of strong leather straps if travelling. The more frequently the plants are shifted into dry paper the better. The collector must be guided by the nature of the plants to be dried as to the number of changes they will require before they are perfectly dry. The first shift should always be after a few hours. The amount of pressure will depend on the consistence of the specimens and the quantity of paper. It must be borne in mind that too much pressure crushes the

delicate parts, and too little allows them to shrivel. The drying paper should be of the same size as the mounting paper. For the latter, that of writing-demy, about 16 inches by 10½ inches, is commonly used. In mounting the specimens no more than one species should be fastened on to the same sheet. The label should be gummed on to the bottom of each mount. A mixture of gum-arabic and gum-tragacanth should be used for fastening the specimens down; any loose or stiff portions may be secured by gumming a narrow strip of paper over them. Cabinets for herbarium specimens, poisons for the insects which sometimes infest them, and other particulars may be obtained from tradesmen who deal in such articles. The specimens should be kept in a perfectly dry room.

GARDEN FLORA.

PLATE 462.

A GROUP OF IXIAS.*

THE genus *Ixia* as defined by botanists is composed of about a score of distinct species, most of which have been in cultivation at some time or other in gardens in this country. As in the case of Crocuses, Tulips, Narcissi, and other genera of bulbous plants which have been long cultivated, the *Ixias* have been crossed and recrossed one with another, both naturally and artificially, to such an extent as to have given rise to what are termed numerous garden forms, and in by far the majority of these the distinguishing characters of the original species are no longer traceable. In many of these the variegation in the flowers is of the most strikingly beautiful description, so that in a bed of mixed *Ixias* we find an endless variety of shade and colour. Both at the Cape and in the Scilly Islands, in France and in the Netherlands, *Ixias* are grown on a large scale for the supply of the bulb market. In England the cultivation of these plants out of doors does not meet with much favour, owing to the unfitness of an average English season for their growth and the production of flowers. In a few nurseries, however, and in some private gardens in the south very fair success has been met with in the out-of-door management of *Ixias*.

THE BEAUTIFUL BLOOMS represented in the accompanying plate show better than words could do what charming garden plants *Ixias* are. Cheap, easily grown, and when in flower full of elegance and rich in brilliant colours, these little Cape weeds should, and indeed do, find wide favour with us both as pot plants for spring flowering and for the beautifying of warm, sheltered borders out-of-doors in summer. For a few shillings one may procure almost a peck of *Ixia* bulbs in "fifty or a hundred of the finest and newest varieties"—good sound bulbs, too, such as will not fail to flower if their requirements, which are simple, are afforded them. Let no one wishing to "go in" for *Ixias* trouble about species or even named varieties unless it is desired to keep the colours separate. From good bulb houses one is sure to get a choice assortment of the most beautiful kinds in the mixed sets, and mixed pots or clumps of *Ixias* are, to our taste, much more beautiful to look upon than when the colours are kept distinct. Having obtained the bulbs, we have now to grow and flower them. First let me offer a hint on the best time to buy bulbs of these and of all the early-flowering Cape bulbous plants. What has been said lately with regard to the harmful effects of an unduly prolonged exposure of certain bulbs

in dry warehouses and shops applies just as much to these natives of dry, sandy plains as to those which inhabit a moister soil. An excess of exposure is unnatural for both bulbs and seeds, and although neither may succumb to it, yet its effects on their vegetative strength must be more or less harmful. That they do not perish is no proof that both bulbs and seeds are not better when left in the ground than when exposed, and we have direct evidence in the case of many bulbs of the advantage of early planting, by which is meant obtaining the bulbs as soon as possible and planting or potting them at once. Of course, the treatment for early-planted bulbs must be different from what would be sufficient for those planted in spring.

SPECIES.—In the early volumes of the *Botanical Magazine* no fewer than seventeen species of *Ixia* are figured, that is if we include the *Morphixias* with the *Ixias*, as is done in the "*Genera Plantarum*." These are *I. polystachya*, flowers medium size, pure white; *I. flexuosa*, flowers small and variable in colour; *I. hybrida*, flowers white with a purple eye; *I. fucata*, a slim species with grassy leaves and a two-flowered spike of small whitish flowers; *I. aristata*, flowers large, deep rose with a pale eye; *I. lutea*, flowers orange-red; *I. patens*, flowers large, of a uniform deep crimson colour; *I. speciosa*, flowers large, incurved, deep crimson within, paler on the outside; *I. maculata*, flowers large, variable in colour, but always with a blotch of deep purple at the base of each petal; *I. columellaris*, flowers medium size, petals narrow, bright red with a purple-maroon blotch at the base; *I. viridiflora*, flowers large, emerald-green, the eye almost black, anthers yellow; *I. monodelpha*, flowers large, blue, purple, yellow, or white, but always dark-eyed, anthers united to the top; *I. curta*, flowers large, petals broad and rounded, red with a zone of purple at the base. The following are what have been called *Morphixia*: *I. capillaris*, flowers medium size, tubular, blue, purple, or red; *I. linearis*, leaves narrow and hair-like, flowers singly on drooping scape, campanulate, pale rose; *I. aulica*, flowers medium size, turbinate, flesh coloured; *I. paniculata*, flowers on tall spikes, tube very long and slender, creamy yellow (this is often called *I. longiflora*). Besides these there are *I. anemoniflora*, a large-flowered species, of variable colour; *I. campanulata*, and one or two others. The whole of the above are supposed to be good species, but how far their characters would hold good compared with the hosts of wild forms known to exist in their native country (the Cape) we need not stay to discuss. Certain it is that few of them come true from seed, and that they all cross and recross with the greatest freedom, so that by cultivating a selection of the most distinct in a bed or frame together and raising plants from their seeds numerous varieties may be obtained. Under these circumstances, it might be well to class them under the heads of three races, as is proposed by Mr. Baker, in the following manner: Group 1, flowers with a large blotch at the base of each petal; group 2, flowers without a blotch on the petal; group 3, the *Morphixias*. As will be seen by the description of the flowers of the above species, the genus *Ixia* is rich in colours, almost every shade, from white to purple, and green to yellow and blue, being represented.

FOR CULTIVATION IN POTS the bulbs of *Ixias* should be potted in October in a light sandy loam with a little leaf-mould added. A 5-inch pot for eight or ten bulbs will be suitable. The bulbs

* Drawn June 10 at Hale Farm Nursery, Tottenham.



should be buried in the soil about an inch below the surface. Place the pots in a cool dry frame and do not water until growth commences. All the sunlight obtainable during the winter and spring should be admitted to them. Care must be taken that cutting, frosty winds do not gain access to the young growths through careless ventilation. From March till May the flowers of *Ixias*, treated as above ought to be plentiful and good. After flowering place the pots in a frame or out-of-doors, and keep the soil moist until the leaves have completely withered. If dried off directly after they have flowered the bulbs are checked in the midst of building up flower-force for the year following.

FOR PLANTING in the open borders October and November is the proper time for *Ixias*, *Babianas*, *Sparaxis*, and other bulbous plants of similar requirements. A light loamy soil, on a warm, sheltered, well-drained south border is a favourable position for them. Plant the bulbs deep, that is 6 inches below the surface; a handful of sand should be placed round each bulb, especially if the soil in the border is inclined to heaviness. If the rains during winter are excessive, some means should be devised for sheltering the borders in which these bulbs are planted. In severe frosty weather a covering of leaves will be found sufficient to protect the bulbs from injury. In spring the winds are often cold and cutting, and therefore it will be well if hurdles or some other means of protection are provided should the foliage be forward enough to be injured by wind. B.

FLOWER GARDEN.

AURICULA COLONEL CHAMPNEYS.

MR. TYMONS and "Delta" seem to have got very unnecessarily into an excited state over the remarks of "H. S. B." on "Delta's" few sentences on Mr. Tymons' Auriculas. From their communications to THE GARDEN of October 4 it would appear that the merits of Colonel Champneys form now the subject of dispute. Well, taking up that point, Mr. Tymons asks, "When has Colonel Champneys been found in any winning class outside that of fifties?" and says further, "A class of twelve or of six in which Colonel Champneys figured would have but small chance of taking honours." I reply that at the National Auricula Show (southern section), held at South Kensington in April, 1882, Colonel Champneys was in the winning stand of six dissimilar varieties which obtained the fifth prize for Messrs. Cannell & Sons, and that there was a prize behind that. I think this disposes of the question. His defence of "Delta's" communication is not to the point. Nobody could have thought on reading the paragraph that the mistake in the names was a printer's error, and "H. S. B." was quite justified in thinking that the writer knew little about Auriculas. "Delta" says that Colonel Champneys has not one good point to a florist's eye. See how florists differ. In a catalogue of 280 show Auriculas published two years ago, and which is often referred to by Auricula growers, I find that Colonel Champneys is characterised as having a yellow tube (one good point), good shape (another good point), smooth paste (yet another good point), and it is called "a fine and effective variety." I think I know Auriculas as well as "Delta" can do, and I would be sorry to class either Colonel Champneys or General Neill, which he singles out, as rubbish. I do not know a perfect Auricula according to the standard set up by florists; even Headley's George Lightbody, Traill's Prince of Greens, and Read's Acme are not free from fault. Some excel in one point and are deficient in another, but I can say that I never saw a named stage Auricula which had "not one good point to a florist's eye." When "Delta" says that Chapman's Sophia is one of the blue

grounds (which it is not) from which Colonel Champneys may have been raised, I am inclined to think, with "H. S. B.," that, notwithstanding his fifty years' growing, his opinion must be taken with a discount. Between the sending out of Maria—whose ground colour is not blue, as he says, but violet-purple—and Colonel Champneys there was only a period of eight years. Does "Delta" attach the idea of "ages" to eight years? I hold with "H. S. B." that the information which "Delta" thought he was giving in relation to Mr. Tymons' Auriculas was of no value to Auricula growers. I regard the idea of discarding from any collection all sorts but those "cracks" which are only grown to take prizes as thoroughly wrong. Of course any man can grow as few or as many varieties as seem to him good; but there are "cracks" among the older varieties, many of which do not now appear in winning stands, which some of the newer sorts, good as they are, cannot touch. If competitors at shows would only grow some of the old favourites as well as they do the more recent varieties, I have no doubt their success with the judges would be equally great. J. M.

THE BALM OF GILEAD.

(CEDRONELLA TRIPHYLLA.)

AMONG sweet-scented plants which one likes to have in a garden, the Balm of Gilead, or Canary Balm as it is also called, is one of the most desir-



Balm of Gilead in flower.

able; its foliage is handsome, and, when gently rubbed, has a rich and pleasant odour. It is a shrubby plant, which in mild localities reaches a height of 3 feet or 4 feet. The flowers are not showy, being small, pale purple, and crowded into dense heads, but the leaves are of a rich deep green and much wrinkled. It is particularly useful at this season for associating with cut flowers. It thrives in any light garden soil, and likes a warm spot best, as it is apt to be injured during severe winters. The Balm of Gilead is a very old garden plant, having been introduced so long ago as 1697; it was first brought to Europe from the Canary Islands under the name of *Permentia de Tana*. It is also known as *Dracocephalum canariense*.

MANURING HERBACEOUS BORDERS.

IF "J. C. C." alone was interested in this matter, I should be prepared to agree with him that "no useful purpose would be served by discussing the subject further," for he seems to be of "the same opinion still"; but as his remarks are preceded by three or four questions, such a course seems scarcely advisable. He appears not to have read the first and last but one sentences in my remarks, viz., those in which I state that "where practicable, a mulch of manure is of great service even to herbaceous plants," and that "where it seems imperative, a sprinkling of old, crumbly, rotten manure answers the purpose and does not look so unsightly as the annual manurings given to our flower-beds occupied with tender plants, as recommended by 'J. C. C.'" I argue that to compare the exhaus-

tive effects on the soil of herbaceous plants with those produced by such esculents as Onions and Cauliflowers is to greatly exaggerate; that if the stems be allowed to die down, the nutrient matter is returned to the storehouses of subterranean stems, roots, tubers, and bulbs; whereas in the case of vegetables it is carried away for food and must be replaced by annual manuring or rotation of crops. If people cut away the green stems and leaves of such things as Dahlias, Sunflowers, Lilies, Delphiniums, Phloxes, and all manner of bulbs, and remove them to the manure heap as soon as flowering is over, then I can see the absolute necessity of regular manuring; but if they are allowed to die down naturally, there is very little to be removed excepting empty cells and woody tissues which we know to consist of carbo-hydrates (when charred the carbon represents 50% of the residue) of little value as manure, except that when rotted, they, in the shape of humus, form an absorbent medium for the nutrient compounds supplied in farmyard and other manures; they are organised matters, and as such are not used, in their then condition, by plants as food. The object of manuring is to restore nitrogenous, phosphoric, and potassic compounds, which are removed from the soil where fruit and green produce are grown, not to supply carbon compounds, which are obtained from the atmosphere solely. One generally supposes the soil in a herbaceous border to be almost filled with subjects, ranging from clumps of Anemones, Ranunculuses, Snowdrops, Scillas, and the like, amidst a carpet of Sedums, Antennarias, Herniarias, Achilleas, &c., in the foreground; through a middle distance of Gentians, Pinks, Pentstemons, Poppies, Antirrhinums, Lychnis, Gladioli, Gaillardias, tall Anemones, Irises, Rudbeckias; with a background of Tritomas, Lilies, Lupines, Delphiniums, Foxgloves, Dahlias, Sunflowers, and Hollyhocks. These, with a hundred suitable things calculated to give us bloom all the year round, are constantly dying down to make way for each other in proper season; consequently to fork in manure round clumps of such plants is to do more mischief to hidden gems than ever becomes known; crowns of Lilies, Funkias, Aquilegias, Phloxes, and what not get heart-thrusts liable to kill them. If the border be properly furnished, and the labels could be asked where a fork is admissible, they would answer, "Not here at any rate;" and woe betide the plants if their positions are not indicated! The occasional lifting, say once in a few years, for the purpose of division is a different thing from an annual forking over; besides, the method of procedure is different and the risk of damage minimised. What chance would "J. C. C." by his regular manuring give his plants of reproduction by seeds self-sown, one of the most interesting of gardening anticipations? Underground stems also would be likely to get injured.

Since writing the above I have looked up a witness or two amongst authorities against the disturbance of herbaceous borders. In "Hardy Flowers" (p. 11) we read: "In the case of the properly mixed border one preparation is all that we require. No sensible person will begrudge the labour necessary in the first instance. . . . As the kind of arrangements I recommend give little trouble after the first planting, they should get the best attention at first, and then they are finished for years. It is a most unsatisfactory, and to some extent contemptible, mode of gardening, that of continually 'muddling' over the same ground spring after spring, and autumn after autumn. . . . The best and highest pleasure to be derived from our gardens will soon be found to lie in those things which, when once well done, we may leave alone for years, and in some cases for the course of our natural lives." "Alpine Flowers" (p. 50) says, "It is a great mistake to dig among choice hardy plants, and therefore no amount of pains should be spared in the preparation of the ground at first. If thoroughly well made then, there will be no need of any digging for a long time. . . . No practice is more general, or more in accordance with ancient custom, than that of digging shrubby borders,

and there is none in the whole course of gardening less profitable or worse in its effects. When winter has once come, almost every gardener, although animated with the best intentions, simply prepares to make war upon the roots of everything in his shrubby border. The generally accepted practice is . . . to dig all over the surface that must be full of feeding roots. Herbaceous plants if at all fragile and not easily recognised are destroyed; bulbs are often displaced and injured. . . . If we resolve that no annual digging or manuring is to be permitted, nobody will begrudge a thorough preparation at first. The planting should be so arranged as to defeat the digger." Hemsley's "Handbook of Hardy and Herbaceous Plants" (p. 590) says, "To improve or renovate the soil, a surface dressing of leaf-mould or rotten manure may be applied if desirable; but the better plan is, if the borders have been properly prepared, to leave them alone for a few years, and then partially or wholly renew them, and transplant the whole of the occupants." In the preface to "Hardy Perennials" Mr. Wood tells us that "if a right selection is made and properly planted, the plants may be relied upon to appear with perennial vigour."

These quotations speak for themselves as to the evils that result from digging borders filled with herbaceous plants. R. A. H. G.

NARCISSUS CATALOGUES.

CHILL October will soon have left us nothing, as "J. C. L." observes (p. 248), but these and our anecdote. And these catalogues are certainly fascinating, and grow in interest every autumn. The elaborate pages of the Daffodil specialists, and the increasing space given to Daffodils by the ordinary bulb dealer, prove that the popularity of these flowers is not yet on the wane. Messrs. Barr's illustrated "Daffodil Conference Supplementary Catalogue" of course takes the first place. It is well got up, and forms a useful addition or companion to Mr. Burbidge's book. The group of Daffodils on the cover is excellent; the small woodcuts are fairly good, but all seem to me to represent the flowers rather more drooping than in Nature, and a few, *e.g.*, the drawing of poeticus ornatus, fail to give a true idea of the plant. Mr. Barr is a little too dogmatic in his statements upon questions which are still *sub judice*, such as the doubling of single Daffodils and the identification of the single form of the common double poeticus. Varieties, too, of doubtful identity are forced by him somewhat too precipitately into Parkinson's and Haworth's pigeon-holes. Nevertheless, this is a great way in advance of any catalogue hitherto published. There are seemingly good things still in store for us in the inexhaustible Leeds and Backhouse collections. The yellow Ajax M. J. Berkeley, for instance, "nearly one-third larger than maximus, which it much resembles," will be worth having.

Mr. Ware has this year brought out a separate list of Daffodils and Lilies, containing an abstract of the paper read at the conference by Mr. Burbidge. Messrs. Collins and Gabriel have made considerable additions to this part of their bulb list and offer some new Daffodils, chiefly Italian. Mr. W. Baylor Hartland, of Cork, sends us a very pretty and tastefully printed "Little Book of Daffodils," and offers some new Irish forms, single and double. The following items in these catalogues are noticeable:—

CORBULARIA TENUIFOLIA.—This is offered by Messrs. Barr for the first time since 1881. It is figured by Sweet, I think, with upright foliage, but the tiny-flowered species which I have had for some while in my garden under this name has entirely prostrate leaves.

BICOLOR J. B. M. CAMM is greatly advanced in price this season. From what Mr. Barr tells me, and from my own experience, I fear this beautiful variety has a bad constitution. Two exceedingly fine bulbs planted here with all care in autumn, 1883, refused to flower or make any growth. I have now planted it in my special little south border, excavated nearly 3 feet deep and

filled with rich sandy soil, in which Tazettas and subjects demanding perfect drainage thrive wonderfully. If it will not bloom there, I can do no more for it. Mr. Burbidge tells me that he has flowered this Daffodil successfully the last two years.

F. W. BURBIDGE, a fine pale Ajax, I flowered here last spring. It is remarkable for opening quite yellow (much more so than ordinary *cernuus*), and then quickly fading to almost pure white.

PALLIDUS PRÆCOX is apparently the palest selection from the wild *Narcissus* of the Lower Pyrenees. Mr. Wolley Dod tells me that he has for some time past received flowers and bulbs (of which he has kindly given me a share) varying in colour, but all pale, from the Bayonne district. Two dealers offer bulbs of a yellow *præcox* from Italy. It is remarkable that the Pyrenean Daffodils are mostly pale, yellow selfs being rare, while in Italy the wild Trumpets are generally yellow. It is doubtful whether *pallidus præcox* will long retain its early-blooming character, or, indeed, establish itself at all in our gardens.

REBECCA SYME (the Violet-scented Daffodil).—This pretty little Daffodil was shown by Messrs. Barr at the conference, and certainly has quite a strong scent of Violets. It is probably a natural seedling or hybrid from some form of *N. moschatatus*. The Dutch trade *moschatatus* (which includes more than one form of white Daffodil) was, I suppose, so named from its scent, and is still described in catalogues as Musk-scented. I once only found a single flower in my garden with a faint fragrance, which struck me as being more like Violets than Musk. With this solitary exception I have found these forms scentless.

SPURIUS CORONATUS is offered by Mr. Ware. The description of this flower sounds not unlike that of a remarkably fine Ajax, which has been in my garden for at least two years, bought, I believe, amongst Dutch trade *maximus*. My flower is exceedingly like the specimen of major *superbus* so called which Mr. Barr showed at the Kensington Conference, so much so, that I cannot help thinking that if not identical with it, it must be a seedling of the same parentage. Mr. Barr's flower, by the way, was not at all like the drawing given in his illustrated catalogue. I am looking forward with interest to an opportunity in the spring of comparing my plant with this *spurius coronatus* and with Mr. Barr's major *superbus*. The sudden appearance of this fine sort among my Daffodils shows, I think, that there are in the gardens and smaller nurseries of Holland good varieties unknown as yet to commerce. A friend of mine has in her garden a very beautiful and distinct golden Ajax, much like a small *maximus*, which came to her among some Dutch major.

BICOLOR MINOR is offered by Messrs. Collins and Gabriel. I do not know at all what this may prove to be; there is nothing answering to the description in Messrs. Barr's large list.

REGINA MARGHERITA and **UMBERTO I.** are new Italian forms introduced this season by Messrs. Collins and Gabriel, and are described as being very large, the former a bicolor, the latter a yellow self.

LORIFOLIUS and **RUGIFOLIUS**.—Has Mr. Barr decided at last that these are one and the same plant? They have appeared to me to be identical as established in my garden, and *lorifolius* has dropped from Messrs. Barr's trade list, while in the larger list it is bracketed with *anceps*.

TOTTENHAM YELLOW (Ware) is apparently the same as a handsome yellow trumpet which I have hitherto called *pale maximus*. It increases quickly and seeds freely with me, and is likely to prove valuable for hybridising purposes.

PRINCEPS.—Mr. Hartland's list includes a fine late form of this. For my own part I have always reckoned *princeps* to be one of the least beautiful of Daffodils. The trumpet is disproportionately long, giving the flower an overbalanced appearance, and the perianth is weak. Some varieties of this long-crowned Ajax are not uncommon in old gardens in Hampshire and Wiltshire.

THE **HUMEI** forms are worthless, except as a proof that even Daffodils can be made unsightly. We can now have our full choice of beautiful shapes and colours, and these abortions might very well be expunged from the catalogues.

CERNUUS PLENUS seems to be very scarce, judging by the price asked for it. I shall be glad next year to give this in exchange for other bulbs or plants.

MINIMUS.—This rare little plant is offered by two dealers. One could not, after all, actually supply it; from the other I obtained bulbs which do not, however, look like the genuine article. This little Daffodil in its finest form, as found among the Pyrenees by Mr. Harpur Crewe, is in shape and colour one of the most exquisite of its race.

INCOMPARABILIS ALBUS DR. GORMAN, as exhibited by Mr. Walker at the conference, is a splendid kind, quite the finest, I thought, of all the pale varieties of *incomparabilis*, a large, yellow-cupped form, with pure white perianth. Mr. Walker told me that it is not a new seedling, but an old sort, and Mr. Barr now identifies it with Haworth's *Queltia alba*, but by mistake marks it with an asterisk as a modern flower.

INCOMPARABILIS ALBUS MARY ANDERSON (Single Orange Phoenix).—This was shown and remarked upon at the conference. It is strange that we have not before had this singularly brilliant flower. It will probably prove hardy and easily increased. In orange-red colouring it is little, if at all, inferior to the high priced C. J. Backhouse.

LEEDSI BEATRICE seems a near approach to a really pure white form of the chalice-crowned *Narcissus*. *Montanus* is white, but useless for cutting, from its habit of bearing imperfect blossoms. A shapely, pure white *incomparabilis*, holding its flowers well up, would be a fortune to its introducer.

Three forms of *tridymus*, or *Polyanthus Trumpet Daffodil*, are offered by Messrs. Barr. They are more curious than decorative.

ODORUS RUGULOSUS is to be recommended as quite the best variety of its class for cut flowers. It is the most compact in growth, and of a peculiarly rich yellow. *Odorus minor* is quite wrongly described in one list as "nice for cutting." The truth is that it seldom produces perfect flowers.

BIFLORUS.—Mr. Barr gives in his supplementary catalogue an interesting quotation from Herbert with reference to the supposed sterility of this *Narcissus*. Herbert also refuses to call *biflorus* a hybrid. I have never been able to detect either pollen or ovules in this flower in my garden, but I know a locality in Wiltshire where it is plentifully naturalised in the meadows, and where I intend to examine the plants carefully. Mr. Brockbank, I think, suggested that the great *incomparabilis* Sir Watkin has some blood of *biflorus* in it, but such an origin is extremely improbable.

POETICUS VERRAENSIS (Collins & Gabriel).—What does *vervaensis* mean? Is this the small wild poeticus so abundant at Vevay and elsewhere? *Poeticus verbanensis* (Lago Maggiore) is described as a rare kind and produced but sparingly in its native habitat. There are probably more varieties of *Poet's Narcissus* than have yet been recorded.

TAZETTA BAZELMAN MAJOR has gone up in price this year. This fine *Polyanthus Narcissus* is a species (*trewianus*), as is also *Grand Monarque* (*floribundus*). These have been cultivated in Holland for at least 200 years under the same names, and it is curious that no new seedling forms should in so long a period have surpassed them. Old Miller, in his excellent "Gardener's Lexicon," gives minute directions for raising *Polyanthus Narcissus* from seed, and takes our gardeners to task for not competing in this work with the Dutch. G. H. ENGLEHEART.

Appleshaw, Andover.

Camellias on north walls are a decided success on the south coast, for, although hardy enough to stand as open bushes, they well repay

the shelter of a wall, and I find that a north one suits them admirably. They begin to flower in the open air about Christmas; they keep in bloom at least three months, and I find that even sharp frost does not injure the bloom nearly so much on a north wall as on aspects where the sun's rays reach them. Anyone having a space to fill on a northern aspect will do well to give the Camellia a trial.—J. G., *Hants.*

Montbretia Pottsi.—The reason why your correspondent dating from Farnborough Grange has failed to bloom this plant seems obvious. The mass of bulbs it must have produced if standing in the same place for three or four years is quite sufficient to explain its paucity of flowers. If he will break up the mass and plant the strongest bulbs 6 inches apart in rows, or in small clumps of three to five bulbs each, he may confidently reckon on flower-spikes from every plant. It is so prolific of offsets, that they are inevitably starved unless frequently divided.—W. T., *Ipswich.*

What does Cheiranthus mean?—I think Mr. Wolley Dod has satisfactorily answered this question, and I willingly withdraw my impugnation of "gardener's Greek." I am happy to profit once more by Mr. Wolley Dod's erudition. Alas! it is nearly a quarter of a century since I was "up to" him in fifth form. I wonder if my pseudonym recalls to him the idle boy who used to lay traps for an indulgent preceptor; traps in the shape of sketches of salmon-fishing, in the discussion and criticism of which he (the preceptor) would sometimes be wiled to spend part of a wearisome school hour.—SALMONICEPS.

Single Asters.—I lately saw a bed of these in Mr. Dobree's garden at Byfleet, and a very bright and pleasing appearance they presented. Mr. Kirk, the gardener, tells me that he grows them expressly for cutting, a purpose for which they are evidently much better suited than the double kinds, being so light and graceful. I have no doubt that single Asters have a future, and that in a short time they will become popular. In my opinion they are superior to Pyrethrums, some of the shades of pink being very lovely. I would advise those who need many cut flowers in summer to give single Asters a trial. I feel sure they will afford satisfaction.—J. C. B.

Nicotiana affinis.—I find people begin to think that this plant has been too much praised. Everybody seems to have got it, and it is planted in many cases in positions totally unsuited for it. I lately saw some large beds in a conspicuous part of a flower garden filled with it; its flowers close up as soon as the sun begins to shine; they, however, open again in the evening, and emit an agreeable scent, but in what way this plant is suited for the flower garden I am at a loss to know, as at the best time to see it gardens are seldom visited, and I feel sure that many who have been tempted to plant it largely this year will not repeat the experiment next season.—J. G. H.

Marigold Meteor.—It is not every double flower that harmonises well in floral arrangements, and I was surprised to note the pleasing appearance effected by this one. A few blooms of it, interspersed with sprays of Fuchsias, Clematises, and other hardy flowers, looked very distinct and pleasing. This new Marigold is a fine addition to the family, the flowers being beautifully formed and distinctly and regularly striped. It is not particularly showy, but its beauty gains by close inspection, and is more impressive in a cut state than on the plant. By the way, what a pity it is that Marigolds are so liable to mildew; they get completely eaten up by it here, becoming at times as white as flour. It came on about three years ago, and is now a regular visitant.—J. C. B.

Narcissus pallidus præcox (p. 324).—I have left an open line for "B. H.'s" roots, and if he sends them at once they will be planted within three or four days of my *N. pallidus præcox*, and in spring any question as to identity will be settled, as the two will grow side by side, and being planted about the same date their time of flowering

will be fairly tested. "B. H." remarks, "This same Daffodil is spoken of as being a perfect bicolor." If by this is meant two colours, well and good; but if intended to convey the idea that the Daffodils figured in Regel's *Gartenflora* are in the way of *N. bicolor* (Haworth), it is not so. The figures 2 and 3, *pallidus præcox* and *gracilis*, are simply *Pseudo-narcissus*, and, unless my eye deceives me, I saw baskets of cut flowers in Covent Garden Market last spring, said to be from Marseilles, that would match with Regel's figures 2 and 3. No. 5 is in the same line, and did it not bear another name I should have felt inclined to recognise it as the one I named some years back *Exquisite*.—PETER BARR.

The white Lily (*L. candidum*). I am glad that Mr. Cornhill has called attention to the unsatisfactory behaviour of this Lily, which seems to be the same in widely different places. I am, however, of the same opinion as Mr. Cornhill, viz., that it would be a difficult matter to indicate the conditions that suit it best. I have planted both in shade and sunshine with the same result. Some years it flowers as well as I would wish; in others the leaves and stems are scorched into black tinder without any apparent cause just as the flowers should begin to expand. I have long looked for a satisfactory explanation of this matter, and I am sorry that Mr. Cornhill cannot throw more light than he does on it.—J. C. C.

Chrysanthemums on walls are very effective, possessing as they do so many shades of colour, and they are more secure from early frosts on walls than when grown in open borders. Any one therefore having a spare wall (one with a southern aspect answers best) may have good blooms of Chrysanthemums in November. Cuttings struck in March, stopped once, hardened off, and planted out in May, will produce many blooms if water be given them during summer when dry; keep them fastened to the wall to prevent breakage by wind. Almost any variety will succeed under this treatment, but if one kind is better suited for the purpose than another, it is Mrs. G. Rundle, a free bloomer and a very desirable sort.—E. MOLYNEUX.

White Everlasting Pea (*Lathyrus latifolius albus*).—Amongst the many good hardy plants that one seldom sees is this Pea, fine examples of which were shown in August last by Messrs. Sutton at the Farnborough flower show, held in the park belonging to the Empress Eugénie at Farnborough Hill. They had a good bunch of it, and it was much admired. It is one of those good things that deserve to be better known than they are. So chaste and beautiful is it, that it forms a fit companion for the choicest Orchid or Stephanotis for bouquet and other floral work of that class. Amongst cut flowers at the same show I also noticed a perennial Sunflower with large yellow blossoms, broad petals, and a dark centre, *Harpalum rigidum*, two handsome Gaillardias, and grand bunches of *Coreopsis coronaria* and *Diadem Pinks*. There were also double white Chrysanthemums of the *Dunnetti* type, *C. atro-coccineum*, the old double Sweet Sultan, purple and white, and good spikes of *Gladioli*. Large seed firms and nurserymen who take exhibits to small shows like this are to be congratulated; they help the societies and increase people's taste for flowers.—J. C., *Farnborough Grange.*

SHORT NOTES.—FLOWER.

Daffodils abroad.—On the coast line of Guernsey, down to the verge of the cliffs, I have seen Daffodils nodding gaily to one another in countless hordes. In Holland I fancy they must be late in flowering, for in the middle of April I did not see one in the neighbourhood of Haarlem. Perhaps I ought to have stopped at Leyden.—C. A. M. CARMICHAEL.

Hardy Cyclamens.—The rose and white-flowered varieties of Cyclamen commenced to bloom with us early in August. At that time the flowers were not numerous, but for the last six weeks they have been abundant, and the plants promise to go on flowering for a week or two longer. When once a stock of plants is secured they give no trouble. They may remain undisturbed for several years; no sort of weather injures them, and they blossom as regularly as the season comes round.—J. C. C.

Chrysanthemum Madame Desgrange.—This variety blooms well out-of-doors. When planted at the back of herbaceous borders its creamy white flowers are very effective. Cuttings of this Chrysanthemum should be struck in the usual way in the beginning of February, pinched once, and allowed to grow with from four to six shoots to each plant. About the middle of May they should be planted out in good soil with a little manure added to it. They should not be pinched again, but allowed to break of their own accord, and they should be kept neatly tied to a stake. Thus treated they will grow about 4 feet high, and produce on each shoot a great number of blooms, which during September and the early part of the present month will be much appreciated.—E. MOLYNEUX.

Narcissus princeps.—"F. W. B." (p. 289) expresses a belief that it was from Ireland I obtained this Daffodil, but not so. In 1876 or 1877 (I am not certain which) my friend De Graaff, of Leyden, sent me bulbs of a *Narcissus*, expressing a wish that I should grow it and find out its name, adding, "I found it growing in a farmer's garden." When it flowered I referred it to *princeps*. I am not, however, quite certain I was right, as I have now a suspicion that it is a variety of *Telamonius*, and may be found growing near Florence; at least, roots collected for me some years back have for the last two years shown an admixture of *Telamonius* and *princeps*. Seeing this, I have had some more roots collected, and when these flower, perhaps in 1886, I shall, I hope, know for certain what it is. It was in 1882 I first bought roots of Daffodils in Ireland, having the previous spring named some specimens of *cernuus* sent to me by ladies, one of whom offered me roots in the autumn, and also a large trumpet variety (name not known), and which proved on flowering to be *princeps*, and so far as I have been able to investigate this variety, it is not so abundant in Ireland as "F. W. B." imagines. I think that Mr. De Graaff, who has hitherto supplied the United Kingdom with this Daffodil, need have no fear of competition from that quarter.—PETER BARR.

Early-blooming Chrysanthemums planted in outside borders amongst herbaceous plants are showy, useful, and interesting plants, particularly to those who have a partiality for Chrysanthemums in any form, and they bloom at a time when outside flowers are getting scarce. If cuttings of them struck in a gentle hotbed in February or March are potted off, and grown on in frames till the beginning of May, and then planted out and freely watered if the summer is dry, they will succeed admirably, and will require no more attention beyond staking and tying. The following are a few of the best kinds, together with their time of flowering and respective heights, viz.: *Madame Desgrange*, a showy white Japanese variety, slightly shaded with yellow, 3 feet to 4 feet, September and October; *M. Pynaert Van Geert*, a very free-flowering Japanese kind, orange-yellow, with bright red stripes, 4 feet, September; *Anastasio* (pomponne), soft violet-purple in colour, sturdy habit, 2 feet, September and October; *Frederick Marronet* (pomponne), reddish orange, free-flowering, 3 feet, September; *La Petite Marie* (pomponne), white, with yellow tinge, blooms freely, dwarf habit, 15 inches, one of the best, August to October; *Lyon* (hybrid pomponne), rosy purple, very fine, 3 feet, September and October; *Mr. Cullingford* (pomponne), bluish white, a good companion to the preceding, being of the same height and flowering at the same time; *Mdme. Jolivar*, nanum, and *St. Mary* are good light-coloured sorts which flower freely during July and August, height 2 feet; *La Vierge* (hybrid pomponne), fine large white flower, 2 feet, October; *Précocité*, bright yellow flowers, 2 feet; *Madeline Davis* (pomponne), an exceedingly free blooming kind, very early, June to September, pure yellow, 18 inches high; *L'Or du Rhin* (Japanese), yellow, October; *Alexander Dufour* (Japanese), purple-violet, October; *L'Admirable* (Japanese), orange, good in habit, and hardy, October. If more are required, the following

which are all good varieties, flower freely from July to September, viz.: Curiosity, lilac; Illustration, bluish; Lucinda, bluish; Little Bob, crimson; Madame Picot, rose-purple; St. Cloud, pink; and Virginia, white.—E. MOLYNEUX.

KITCHEN GARDEN.

ONIONS, TURNIPS, AND CARROTS.

A GOOD supply of these is of the utmost importance; nothing can be done without them. A dish of Kidney Beans may be wanted to-day, Peas to-morrow, Tomatoes next day, and other things in succession before the same may be required again, but there is no interval in the demand for Onions, Turnips, and Carrots. Cooks, male and female, use one or the other or all of them in nearly every one of their compositions, and if they are withheld from one dish, they certainly cannot be from a full dinner supply. Happy the man, then, who has plenty of Onions, Turnips, and Carrots; but those who have the misfortune not to possess them may have failed while doing their utmost to secure them, as Onions and Carrots are two of the most difficult crops to produce in the whole range of kitchen garden subjects, and it is no easy matter at all times to grow Turnips large, sound, clean, and sweet. It is only too well known that Onions are most liable to "go off" at all stages of growth through being attacked by worms or maggots; Carrots are equally liable to their attacks, and Turnips frequently bear worm traces through the base of the bulb. Wherever these crops grow well one may conclude that the soil is good and well managed, but some soils take a great deal of managing before they produce perfect specimens of the esculents now under notice, and it is to this part of the matter that attention should now be directed. There is no time better than autumn and winter for dressing soils for these crops. If the materials used in doing this now were applied in spring or just before sowing time, the cure might be worse than the disease; but any dressing given now will be considerably toned down before seed time, and so will grubs. One of the best of all antidotes for Onion, Turnip, and Carrot pests is gas-lime. Provided the soil is suitable in other ways for the growth of the crops just named, I will venture to assert that gas-lime will do its part with regard to getting rid of insects. I have never known it to fail when properly used. Now is the time to dig it in. The surface of the ground should be cleared from the preceding crop and the lime should be spread all over it at the rate of one and a half tons per acre, then dig it well into the soil and do not disturb it further until spring. Another way is to spread it on, but not to dig it in until a good deal of rain has fallen on it. I have tried soot and salt, together and separate, in the same way as the lime, but in my opinion they are not so efficacious. No manure should be dug into the ground at the same time as the lime, but manure may be applied in spring for the Onions and Turnips. Care must, however, be taken that insects of an injurious character are not introduced afresh with the manure. To prevent this, I would recommend the manure for the quarters to be put by itself, and a hundredweight of salt and three bushels of soot to be added to every ton of it, mixing all well up together some time before use. This might appear to some to be rather troublesome work, but it really is not so, and, indeed, no amount of labour should be considered too great to secure good crops. Sand, such as that which can generally be had in unlimited quantities along the seashore, is capital material for roots, as they turn out of it beautiful and clean, and in heavy soils it may be used extensively with much advantage. J. MUIR.

Daniel's new Cabbage Lettuce.—That this is an excellent Lettuce I think all who have grown it will admit. In April I planted out several hundreds of it on a south-east border, and without any extra attention we had from the middle of June to the end of September a daily supply of large, close, and well-hearted Lettuces, and, notwithstanding the hot weather which we had, not one bolted. It comes white, crispy, and good in flavour.—G. L. R. *Tending.*

LEEEKS AND YELLOW TURNIPS.

SCOTLAND has always been noted for exceptionally fine Leeks. The quality of the Leek, like that of most other culinary vegetables, varies much according to the way in which it is grown. The small tough examples often met with in England have little in common with the immensely thick, long, blanched Leeks grown north of the Tweed. As might have been looked for, the Leeks at the late Dundee show were amongst the most noticeable of the many excellent vegetables there shown, several of the best dishes staged being wonderfully fine, of immense size, as even in thickness as possible, and blanched 12 inches or 15 inches; the dish of Dobbie's Seedling, shown by Mr. Thomson, Kirkintilloch, which took the first prize, was unusually fine.

In the sorts of Turnips that are generally liked, Scotland and the north of England are quite different from the south of the kingdom. In London, trying to find a yellow Turnip would be all but a hopeless task, even if every greengrocer's shop for miles was ransacked, as the preference for white ones is so decided, that no one ever thinks of growing the yellow sorts. Just in the same way the white ones are discarded in the north; even in the Manchester market few white ones are to be seen. As to the preference given to the white before the yellow varieties of this vegetable, and *vice versa*, each part of the country will most likely keep on as they hitherto have done; but, putting prejudice and the influence of custom aside, I think those who are really fond of Turnips and have had fair opportunities of judging the merits of both the white and the yellow kinds will scarcely fail to like the yellow best. It is scarcely necessary to say that soil with enough moisture has a good deal to do with the quality of Turnips. In dry, parching summers, such as the past has been in the south of England, it has been no easy matter to have them otherwise than tough and hot-flavoured. Cool, moist weather suits them; hot, poor, hungry soils do not answer for them. The variety has also much to do with quality. As a rule, the thinnest rooted sorts are the best; the thick, coarse-rooted varieties rarely fail being coarse and stringy in the flesh, and only by careful selection of the best shaped roots for seed can the strain be kept up to the mark. At the recent Dundee show the yellow Turnips in the numerous collections of vegetables exhibited were remarkable for their excellence, as smooth in the skin as Apples, with tap roots no thicker at their junction with the bulb than a Cedar pencil. Seed saved from well-shaped examples, such as those shown at Dundee, may be depended on for giving only a small percentage of thick-rooted, misshaped bulbs, but with the best strain possible selection of the roots for seed purposes is necessary, as if saved indiscriminately Turnips soon degenerate, just in the way that occurs with Carrots, however true the seed may be to the particular variety represented. T. B.

AUTUMN PLANTING POTATOES.

It is more than thirty years since I was first engaged in garden work, and my first tutor was a man who thoroughly believed in planting his early crop of Potatoes in November. Since then I have more or less seen the same system practised and with varying results, the latter depending entirely on the character of the land in which the crops were planted. At the same time I am decidedly of opinion that in certain cases autumn planting is the proper course to adopt, and were it not that the tender nature of the Potato is opposed to it, there could be no doubt about the matter. This is, however, not so serious an objection as some would suppose. If we balance the facts obtained from actual experience in dealing with tuberous and bulbous-rooted plants, it will be found that they all suffer more or less from being kept for any length of time out of the ground. If we take this as a set-off against the tender character of the Potato, and its supposed incapacity to resist frost when planted in the autumn, we have ample testimony that it must suffer to a

greater or less extent through being kept out of the ground for a period of six months. It may be said that we get excellent crops from tubers wintered in clamps and cellars, but I maintain that we have no direct evidence that they do not suffer, and the probability is that if the same care was taken in the preparation of the land for autumn as for spring planting, better results would be obtained. Given rather light and well-drained land, I believe that all the probabilities of earlier ripened and better crops are in favour of autumn planting. The chief argument used against it is the liability of the sets to get injured by frost, but there is very little grounds for such fears if the work is done in a proper manner. The risk from frost is in proportion to the amount of air that reaches the sets from above. If air is excluded, the action of frost is modified, but it must be understood that I am not advocating a hard, compact surface. There is a great difference between a compact mass of earth and one made up of many particles recently moved. The good old gardener to whom I have just referred used to dig in his crops—that is to say, we began at one side of the piece of ground in the direction in which the rows were to run and the sets were planted in the trenches as the digging proceeded. For every row of sets a cut was made in the trench, so that every set was at one uniform depth of 6 inches or 7 inches from the surface. The crumbs in the trench were then packed carefully over them before the next spit was thrown upon them. This left the surface soil in the same condition as freshly-dug ground, and, except to run the Dutch hoe between the rows to keep down weeds in spring, nothing more was done to them, for earthing autumn-planted Potatoes was eschewed as injurious to the early maturation of the crop. I feel bound to state that he was too keen a practitioner to continue any method of cultivation that did not secure for him corresponding results, which, I have no reluctance in saying, that autumn planting did. The garden, however, in which this plan of Potato culture was worked out so successfully was eminently favourable for autumn planting, as there was a depth of 2 feet of good fibrous soil that was naturally well drained. Coming to my own practice, I may say that I have at different times and places adopted autumn planting, with results varying according to the nature of the soil on which it was tried. Where the staple was easily worked into a fine tilth it answered very well, but in heavy land with a cold, ungenial sub-soil I have never gained anything either in point of earliness or in bulk of crop. Of one thing, however, I am quite certain, and that is that in many cases it is quite safe to plant Potatoes at any time during the winter months if the work is done in the way I have described. It is a fallacy to suppose that frost will injure the sets at the depth mentioned. In a word, I have no hesitation in saying that there are two substantial advantages to be derived from autumn planting; one is the earlier maturation of the crop, and the other a decided gain in getting the crop planted when work does not press so heavily as in spring. That autumn planting cannot be recommended for large areas I am quite aware, but that does not in any way detract from the merits of the system as practised in gardens. J. C. C.

Storing Onions.—"J. C. C." (p. 310) is right in pointing to the mistake committed in storing Onions in a place that is at all warm, but it is also a mistake to suppose that they will not bear frost. The best way of keeping Onions is to tie them up by their necks in bunches of ten or twelve together, and hang them as close as to let the bunches just touch each other on the north side or end of a building, where the eave or gable projection of the roof will keep the roof water from reaching them. In this way they will keep sound and firm without sprouting for a month or six weeks later in spring than if in a building out of the reach of frost. With the thermometer down to zero they will not suffer treated in the above way. I never knew them injured but once, and that was in the winter of 1860-61, when in

Che-hire, where I was then living, there were 4° below zero of frost. When Onions have sprouted in spring they become soft, and lose a deal of their properties for culinary use, and in places where much used and continuously wanted, gardeners often find it difficult to keep the old stock in usable condition until the autumn-sown crop is large enough, but by treating them in the manner described, there is no difficulty in having them until the winter kinds are fit for use.—T. B.

SEASONABLE WORK.

FLOWER GARDEN.

SPRING BEDDING.—Where spring gaiety has to be studied, no time should be lost in clearing out the summer bedders and giving the necessary dressing to and digging to the beds. This can now be done without much sacrifice, as although there has not yet been sufficient frost to cut off many of the plants, it may occur any night now; besides, it is very desirable that spring-flowering plants, and particularly bulbs, should be planted soon. As to the arrangement of the plants, much depends on the size and number of the beds to be filled and the plants at command. Provided there is no stint or

limit as to plants, then preference should be given to planting them in masses; but when plants and bulbs are short, then plant thinly and fill the intervening space with hardy carpeting plants. Small, choice, evergreen shrubs are also excellent for dotting about the beds as single plants in central positions, thus saving a certain number of bulbs or plants, and at the same time imparting an immediate finished effect to the beds. Hyacinths, Crocuses, Narcissi, Primroses, Forget-me-nots, Daisies, Pansies, Wallflowers, Stocks, Silenes, Candytufts, Limnanthes, Saponarias, and hardy annuals generally are among the kinds that ought now to be planted, and as soon as done, if the ground be not clothed with surfacing plants, it should be with Cocoa fibre if only for neatness sake, though it is, we believe, of some little value manurially.

WINTER BEDDING.—In those places where spring effectiveness is of less importance than winter a much better effect can at once be made than is possible with spring bedding plants. This is done by using dwarf shrubs principally, though many other species of plants can be worked in well: among them are Thyme (green and variegated), Lamiums, Ajugas, Veronica incana, Sedums, Saxifrages, and hardy Heaths. These all do well for outer lines and groundwork, the shrubs being used for central masses or as standards. The best kind of shrubs are the Retinosporas, Thujas, Cupressus, Osmanthus, Aucubas, Cotoneasters, variegated Hollies, variegated Yews, variegated Ives, green and variegated Periwinkles, green and variegated Euonymuses, Box, and Berberis. In the disposition or arranging of shrubs for winter bedding, the colours being so nearly allied, care is needed to keep them as distinct as possible by planting the lightest greens with the variegated kinds, the darkest with the silvery greens, and

the formal growing kinds with those of an opposite habit. By attention to this simple rule, sameness of colour and a nursery-like appearance will be avoided.

GENERAL WORK.—Lift all plants that must be saved; any that are not valued, and of which there is sufficient stock for another year, may be left till frost has destroyed them. Get all kinds of tender plants under cover, but air freely in favourable weather. Damp, atmospheric and at the root, is at this season the sole cause of plants rotting off; hence this should be guarded against. Proceed with shrub and tree planting as opportunity offers, there being more time for such extraneous jobs at this time of year than there is in the busy spring-time, besides the additional incentive there is for doing such work now, namely, that the plants as a rule flourish better.

INDOOR PLANTS.

NEPENTHES.—These most interesting plants are naturally of a scandent habit, and consequently can be used as roof climbers or trained to a pillar or rafter, in which way, where well grown, they not unusually are effective objects; yet when so managed the pitchers quickly lose the fine shape which is present in such as are produced by the

cut lower than so as to leave two or three leaves to the stools below the point where cut back. Where a sufficient temperature can be kept up through the winter—and it is little use attempting the cultivation of *Nepenthes* without this—any plants that are getting too tall may at once be cut in as above described. By being so treated now they will get much better furnished in the ensuing summer than if the operation was deferred until spring.

CHRYSANTHEMUMS.—If flowers of these have not already been thinned, this operation should be no longer deferred. The extent to which the disbudding is carried requires to be regulated in accordance with the nature of the varieties to be operated upon. There is a very great difference even amongst the large-flowered section in the ability of particular kinds to produce fully developed flowers; some of the largest exhibition sorts are not able, even in the case of strong, vigorous examples in large pots, to mature more than a single bloom on the top of each shoot, whilst other kinds bearing medium-sized flowers will carry four or five times the number. In like manner the larger-bloomed pompon varieties should have their buds thinned more freely than the smallest flowered section, which, for general purposes, need little thinning.

It is well to bear in mind that, even for ordinary decorative use, where there is no disposition to grow flowers up to the exhibition standard, it is advisable to thus thin them moderately, especially in the case of the latest blooming kinds, as where the buds are in this way sufficiently thinned the flowers that are allowed to remain have correspondingly more substance in them, and when expanded will last on them proportionately longer, in this way prolonging their season of bloom. There are now a number of new varieties of these plants, mostly



Some aspects of garden vegetation. Time, first month of summer. A cut needing no comment. There are thoughts too deep and wild for expression.

shoots before they attain much height. This, it may be remarked, is one characteristic of these singular plants. Take, for instance, a strong healthy, well-managed example whilst the shoots have only attained a height of say from 2 feet to 3 feet; the pitchers it produces will keep to the true pitcher shape—broad at bottom, narrowing towards the neck, with those curious appendages, the wings, fully developed; but, as the plants attain a greater height, more or less according to their kinds, the pitchers they produce assume quite a different character, coming very much longer and thinner, especially at the base, which, in place of being inflated and broader than the top, often has its shape so near reversed as to be much narrower at the bottom, with the wings all but absent. Some kinds that, whilst the shoots have not attained a height more than above named, produce pitchers heavily spotted; afterwards as they get longer they come wholly green; in fact, with all the different species that we have cultivated there has been a marked difference in either form or colour, or in both, when the shoots have reached a considerable length, in all cases resulting in their deteriorating. This condition can easily be avoided by cutting the shoots back to within 6 inches to 1 foot of the collar of the plants. Whenever so headed in they should not be

of Continental origin, that bloom early, coming into flower by the end of September, filling up the time between the summer blooming varieties and the ordinary later flowerers, and where there is a demand for cut flowers in considerable quantities, note of these should be taken with a view to obtaining stock for another year.

MIGNONETTE.—Plants raised from the earliest sowing will now have attained considerable size, and if they have been properly attended to, ought to be well furnished with plenty of stout, healthy foliage. If the pots are very full of roots they must be assisted by the occasional use of manure water, or the application of some concentrated solid manure to the surface of the soil that will invigorate them as it is washed down to the roots in the operation of watering, otherwise the plants get a yellow, unhealthy appearance, and there is a premature loss of foliage, and a correspondingly weak condition of the advancing flowers. Where this sweet-smelling favourite is in regular demand, a sufficient stock of the new double white variety ought to be grown, for although it does not seed so as to be raised in the usual way, it can be readily struck from cuttings. The enduring character of the flowers and its general excellent qualities are such as to make it well worth the little extra trouble involved in its

propagation. Where young plants of it exist that are at all short of pot room, they ought to have a shift at once, using good loam well enriched with manure, and to which has been added a moderate amount of leaf mould, a material in which Mignonette, in common with most other soft-wooded plants, makes roots more freely than in loam alone. After this the plants should be kept in a light, airy pit with an ordinary greenhouse temperature, never allowing them to get too cold.

AZALEAS.—Plants that bloomed early last winter and completed their growth at a correspondingly early period will be in a condition to again force early this season. The time that they can be brought into flower will in a great measure be dependent upon the way they have been treated. If kept warm through the early spring until their flower-buds were large and prominent, they may now be brought into bloom by subjecting them to moderate heat in five or six weeks, as in many cases the buds will be almost ready to burst. A temperature of 60° in the night will not be too much, but if they are less forward than here indicated they must not be kept too warm, or the blooms will be soft and subject to flag when cut, for which purpose many of these early-forced flowers will most likely be required. See that the plants are quite clear from thrips or their eggs before being placed in heat, otherwise these will quickly increase and cause much trouble afterwards. Keep them well up to the glass in the lightest position available, and do not at this season syringe them much overhead or keep much moisture in the atmosphere, as water applied now, except sparingly, either by the use of the syringe or in the form of vapour, tends to a soft condition of the flowers much more than in the spring, when there is more daylight and a drier condition of the external air.

TROPEOLUMS.—Tubers of the tricolor section will now be about commencing growth; as soon as this is apparent they ought at once to be repotted. They thrive in either peat or loam, but it should be of a good open character, and as these plants require directly they commence growing to have whatever support they are to receive in the way of a trellis to train them on applied, it is necessary to put them in the pots in which they are to bloom; on this account it is requisite to be careful in the application of water until the new roots begin to move freely in it. Give them a light position in the greenhouse, and look diligently for the appearance of green fly.

FUCHSIAS.—Young plants struck about the end of July or beginning of August, if not already transferred to the pots in which they are to remain for some time yet, which should be 5 inches or 6 inches in diameter, ought, without further delay, to be moved into them. Use good loam, with about one-fourth or one-fifth of leaf mould added, which will assist their rooting freely through the winter. They ought to be kept all but touching the glass in a night temperature of about 50°, and syringed overhead two or three times a week, so as to keep down any red spider that may be about them, for though this pest does not increase much during the winter, still it is partial to Fuchsias that it sometimes gets established on them at this season. Old examples that have done flowering should now be sparingly watered to induce a state of rest; when the leaves are partially fallen they may be cut back as close as it is deemed advisable to shorten them, and if a corner can be spared for them in a house or pit out of the reach of frost they will be better if the soil is not allowed to become quite dry; so treated they will not be subject to so much loss of root and will start away much freer when submitted to a little warmth after the turn of the days. If subjected to a sort of semi-dark treatment, such as under a greenhouse stage, or where there is insufficient light for any healthy growth to be kept up, the soil may be allowed to get quite dry.

SCHIZANTHUS.—There are few more effective plants for greenhouse decoration in spring than this showy annual when well managed in pots. If plants are at hand, the result of a little seed sown

about the end of August, they should be wintered singly in 4 inch or 5-inch pots, keeping them on a shelf close to the glass with a stick to support the main shoot of each, nipping off the points of the side growths to induce them to break out bushy. This is all they require until well into the new year, when they must have a liberal amount of pot room.

ROMAN HYACINTHS.—Where these were potted early they will by this time have made plenty of roots, so as to admit of their being moved into heat previous to exposing the crowns, which will be in a blanched condition when taken from the material in which they have been plunged. They should be shielded from the full light, for if suddenly exposed when in this state to its influence it has the effect of crippling the foliage. After they have been thus gradually brought to bear its power they are better for having a light position, especially if subjected to a high temperature, for in forcing these and all other plants it is well to bear in mind that wherever much heat is used the amount of light should be proportionate, with enough air on all favourable occasions. Only by these counteracting influences can the growth be kept sufficiently short and stout.

FRUIT.

HARDY FRUITS.—With the exception of late Apples, which will be quite fit for gathering, most of the fruit will now be in the fruit room, and the weather being so mild and favourable for ground work, every operation pertaining to the disturbance of the roots of trees will require and repay early attention. On high and dry soils the importance of root pruning is not always appreciated; but in cold damp gardens it forms the keystone of success in the production of good crops of nearly every kind of fruit. Another important matter in the management of wall trees is good coping, temporary or otherwise, for protecting the blooms from frost. It is generally discussed once a year, and is again forgotten until the early flowers remind us that time is on the wing, and it is again too late to carry out the good intentions formed after the sharp frost of the preceding month of April. It is not for us to advise the kind of protection, as circumstances alter cases, but we may say we give preference to portable glass lights 2 feet in depth, which can be taken down and stored away as soon as the fruit is set and safe from spring frosts. Now is the time to set about making, purchasing, or providing protectors for next spring. It will not, however, be well to put them up until they are actually wanted, as constant protection makes the trees tender and more liable to be injured by severe frost. When the usual routine of root pruning and planting of what may be termed modern trees has been brought to a close, there generally remains a large section formed of old friends in the orchards which would well repay the smallest favour; and as many of the trees are profuse bearers, the old-fashioned plan of taking away the surface soil down to the roots and replacing it with a rich mixture made up of fresh turf, manure, charred refuse, road scrapings, or almost anything that can be got together for the purpose, will have the desired effect in increasing the size and quality of the fruit. We will assume that the ground is properly drained and the heads of the trees well thinned out to let in sun and air, but if these matters are not satisfactory, the dead months now before us will be profitably employed in making them so.

PRUNING AND NAILING.—Where the winter dressing of fruit trees forms a heavy item, an effort should be made to get this work forward before severe weather sets in, as men can get on much faster, the work is performed in a better manner, and the early removal of all superfluous matter exposes the trees and walls to the cleansing influences of frost and rain. With us the Currant is nearly ready for pruning; then will follow the Plum, the Cherry, and the Raspberry. The latter will have the canes securely tied to stakes or trellises, the shortening back being deferred until later on, and a good mulch of rotten manure will make all safe for the winter. Peaches and Nec-

tarines we always prune as soon as the fruit is gathered; the shoots are then neatly nailed in close to the wall to ripen, and nothing more is needed until the time arrives for unnauling and drawing the branches away from the walls to prevent the buds from getting too forward. To prevent the shoots from being injured by wind a few stout Ash rods are placed in the border 1 foot from the base of the wall and bowed in to the coping. Every part of the tree is then washed with strong soap water or a solution of Gishurst, 8 ounces to the gallon of water; the shoots are tied up in small bundles and made fast to the rods, and the walls are left quite clear and ready for cleansing with a wash made of quicklime, linseed oil, and Venetian red mixed with boiling water. One quart of oil and a pound of Venetian red to every gallon of wash will produce a warm old brick-red colour when dry, and to avoid having two shades of colour, a sufficient quantity for the season should be mixed up at once. If a fine dry day is selected for applying the wash and working it into the old nail-holes, the enemies which usually attack and cripple the first spring growths will be destroyed, and the chances will be two to one in favour of useful early shoots getting thoroughly ripened before the following winter. In modern gardens, where the walls are well built, a brine or Quassia wash may be preferred; but where they are centuries old, and bricks of every conceivable shape and colour have been introduced, a wash made of materials fatal to insect life produces a cheerful effect, while it increases the chances in favour of better crops of fruit.

FIGS.—If the early pot trees are still standing out of doors no time should be lost in getting them pruned, cleaned, and tied into form, ready for starting, and as three-fourths of a year will elapse before the roots can be again disturbed, let the drainage be carefully examined and put right prior to top-dressing with rich loam and rotten manure. If the house in which the trees are usually forced has been devoted to other plants, see that it is properly cleansed to free it from insects, place each tree on a solid pedestal composed of bricks or inverted pots, give water occasionally to get the soil moist, and keep the house thoroughly ventilated until the time arrives for shutting up in November. Proceed with the root pruning and cleansing of trees that are planted out in internal borders, as trees cannot be kept in a fruitful state where head room is limited and the roots are allowed to run down through the drainage or ramble beyond their prison walls. If pruning is considered necessary, let it be confined to a general thinning away of barren shoots which have reached the extremity of the trellis to make room for younger pieces now thickly studded with embryo fruits, barely perceptible, at the base of every leaf-stalk. Let the house be well ventilated and only shut up to shield the trees from sharp frost or to protect the roots in very wet weather. By this time the latest house will have been cleared of all the fruit that is likely to ripen well, and the trees will be the better for a course of steady firing to mature the young wood. Rub off all partially swelled Figs, wash well with the engine to clear off spider, and dress parts affected with a suffocating insecticide to prevent scale from spreading until the time arrives for winter dressing.

CUCUMBERS.—If any of the pits usually devoted to the growth of winter or spring fruit are still occupied with Melons, lose no time in getting the latter removed, as Melons after this late period are of little value, and the loss of a fortnight in getting weak Cucumbers started often affects them until after the turn of the year. Having so often directed attention to the importance of cleanliness, it is hardly again necessary to remind the young beginner that a pure atmosphere cannot be maintained where it is neglected, and without this and an abundance of light, also secured by keeping the glass clean, it is useless to expect good fruit from Christmas up to the end of March. If the pot system is adopted let the pots be well drained, and fill them quite up to the level of the rim with light, rich turfy loam and leaf mould.

Turn the plants out before they get pot-bound, otherwise they will have spider before they lose their seed leaves. Give plenty of moisture, but avoid scalding steam, and maintain a bottom-heat of 85° to 90° until they get well established, when 80° will suffice for the winter. Where winter culture is not thoroughly understood, the planting-out system should be adopted, provided a good bottom-heat can be maintained in the chamber beneath the soil, and the plants are not so closely crowded together as is often the case where pots are used. Under either system their food, be it solid or liquid, must always be supplied at a temperature equal to that of the house. Insect enemies of all kinds must have no quarter, and mildew must be prevented from entering by good culture and light cropping in an efficiently heated and perfectly ventilated house.

ORCHIDS.

EAST INDIA HOUSE.—Now that the season has advanced so far, shading may be entirely dispensed with. We remove all our blinds and rollers now, and store them in a dry place for the winter. Many keep them up, and let them down to cover the glass when a keen frost sets in at night; this is very well so far as the covering of the glass is concerned, but the blinds become frozen or soaking wet, and cannot be rolled up early in the morning, and the plants are robbed of a few hours' light when every ray is of advantage to them. For this reason we prefer to remove the blinds altogether. In ordinary weather the temperature should range about 65° at night, rising to 10° in the daytime, or even to 20° with sun heat. Atmospheric moisture, too, must be regulated by the state of the weather outside. Where it has been necessary to make the hot-water pipes very warm on cold nights to maintain a brisk temperature, the atmosphere will be rather dry in the morning; therefore the paths and stages must be well watered just before the top ventilators are opened a little. We have no water in the evaporating trough after this time. Pay careful attention to the different species of *Phalaenopsis*. If they receive too much water now, the roots are likely to rot and the leaves to spot; on the other hand, they must not be allowed to become so dry as to injure the *Sphagnum*, else the plants will perhaps suffer too, as they have not pseudo-bulbs, like *Cattleyas*, to support the leaves. They ought at this time of year to be placed as near the glass as possible, but not, of course, so near that the leaves will be injured by frost. Up to this time we have had *Cattleya gigas* in the cool end of this house, where it has made very fine growth. This most beautiful species is well known to be shy in producing flowering sheaths, but we were told the other day that this is generally owing to the plants being kept too warm in winter. Some of the plants have, therefore, been placed in the cool house, where the temperature falls as low as 45°; they are kept there until they start into growth in the spring, when it is found that such plants invariably flower well. Of course, they must have very little water while they are in cool houses. It is best, we imagine, to keep *Odontoglossum Roezli* in the cool end of the house; that is the way in which we treat it, and our plants make very fine growths during winter and throw up flower-spikes in spring. *Lelia purpurata* that may be late in making its growth should be placed in this house; when necessary to water it be careful not to wet the young growth. *Calanthe veratrifolia* is now growing freely; we potted ours in good sandy loam, leaf-mould, and a little rotten stable manure a few weeks ago. The deciduous species, such as *C. Veitchii* and the *vestita* section, are now throwing up their flower-spikes. They lose their leaves as the flowers open, and as the decaying foliage is not attractive, we place the plants amongst Maiden-hair Ferns; they require but little water while they are producing their flowers.

CATTELEYA HOUSE.—About 55° is a good temperature for this house now. The quantity of water which any particular plant may require must be regulated according to the state of its growth; if making growth, it might cause a check if the

plants were suffered to become too dry. Any of the species that may have completed their growth should be watered with caution. The very beautiful *Odontoglossum citrosium*, which does best in this house, should receive very little water indeed. When the growths are completed some place their plants in a cooler house to rest; they ought certainly to be placed in the cool end of the *Cattleya* house; 50° would be the best temperature for them in the winter. We have now the beautiful *Pleiones*, which produce their flowers very freely. They are all of very easy growth, but we prefer *Pleione maculata*, its flowers with their rich crimson markings on a pure white ground being so delicately beautiful. Our plants have lost all their leaves, and the flowers look best against a green setting of Ferns or small-foliaged plants. They have been kept dry at the roots up till now, but as the flowers open we give them water rather freely. Pay attention to the different species of *Dendrobium* in this house, and as the growths are completed let them be removed to a cool, airy position in another house. Some of them, such as *D. Wardianum*, *D. nobile*, *D. Ainsworthii*, &c., will start into growth again if they are not removed as soon as they have completed their summer growth. Our largest specimen of *D. Devonianum* started to make a second growth a month ago, and we must keep growing the plant on until that second growth is completed. The various species of *Vandas*, such as *V. suavis*, *V. tricolor*, &c., are still growing freely, a circumstance quite evident by the large healthy roots still thrown out from the main stem. While this is the case they must not lack sufficient water to keep the *Sphagnum* fresh. The Fox-brush *Aerides* (*A. Fieldingi*), *A. crassifolium*, *A. Lobbi*, &c., are now receiving the same treatment as the *Vandas*.

COOL HOUSE.—We find that the temperature of this house falls rather low on the mornings, following an outside temperature not far above the freezing point, but we do not trouble about artificial heat so long as it is not below 40°; better, however, it should not fall below 45°, as we have *Masdevallias* which do not like so little warmth, and our fine plant of *Cattleya gigas* is in the same house. It is getting late now for potting, but if any plants are in an unsatisfactory state at the roots, it is better to pot them than leave them in that condition all through the winter. The beautiful bright scarlet *Sophranitis grandiflora* will soon enliven us with its dazzling brightness. See that the plants are well exposed to the light; they do best on blocks or in small pans suspended from the roof. We have numerous spikes of the very popular *Odontoglossum crispum* and *Pescatorei* well advanced towards the blooming stage. They must be very jealously guarded from slugs, and green fly must be removed before the blooms open.

THE ORCHARD HOUSE.

Now is the time when this structure should undergo any necessary repairs, improvements, or alterations which may be deemed requisite, such as painting, or at all events the thorough cleansing of the woodwork and the inside of the glass, &c., as by this time most, if not all, of the fruit will have been gathered. If a few late varieties of Peach trees still retain a portion of their fruit, or Grapes still remain on Vines in pots, or on Vines planted out, and trained to the roof or elsewhere, that need not prevent the repotting or surface dressing of other trees. It is unnecessary to wait until the leaves have all fallen before this operation is effected; on the contrary, it is, perhaps, better that it should be performed even before that has taken place, as the leaves may to some extent assist the newly repotted trees to form fresh roots and to become to some extent established in their pots before the gradual diminution of temperature suspends for a time root action. Peach and other trees which may be planted out in borders, and to which it may be intended to apply portions of fresh soil, or in case of over-luxuriance where a salutary check may be thought necessary by the partial raising of the roots, or judicious root pruning—all such work should have attention now rather than in mid-

winter or spring. All trees in pots or tubs which may have been placed in favourable situations in the open air, with the view of thoroughly ripening their wood, ought now to be brought under cover of some kind, in order that the soil may become somewhat dry, a condition which greatly facilitates repotting or surface dressing, as well as prevents injury to the roots through coming into contact with cold and saturated soil. In long-established orchard houses some of the trees may have become unhealthy, and consequently unfruitful, and where that is the case they should be replaced by young trees. Some, also, though in the largest sized pots or tubs, and repeatedly surface dressed, may nevertheless be what is known as pot-bound, that is, the pots crammed full of roots, a condition in which they will be likely to become unhealthy, and as it may not be practicable to repot them into larger pots, the balls of soil should be allowed to become tolerably dry; the pot should then be placed on its side and the ball of soil carefully drawn out of the pot, the inside of which will generally be found to be perfectly clean, but everything in the form of drainage will have disappeared, and the lower part of the ball will possibly be found to be one solid mass of roots, the greater part of which it will be necessary to cut off, thus reducing considerably the ball of exhausted soil. Then repot the tree in the same pot, which should be thoroughly drained, without, however, using more material for drainage than is really necessary. The soil employed for potting should be good turfy loam enriched with rotten manure. This is an operation which in most instances may not require to be repeated for two or even three years, surface dressings being all that will be needed. In the case of younger trees, the pots of which are less filled with roots, surface dressing of a rich character will be all that is necessary, and before applying that as much of the old soil should be removed as possible. Healthy trees in comparatively small pots should at once be transferred into larger pots, using suitable soil for the purpose, such as light, rich, turfy loam, with a fourth part of well-rotted pig or stable manure in it.

KITCHEN GARDEN.

TAKE up and store all roots forthwith, except Parsnips, which are better left in the ground. Of all the varieties of Parsnips we find Maltese to be the best; it is short, but thick, and does not take one half the time to lift that the others do. The quality is also quite on a par with that of Hollow Crown or The Student, the two varieties usually grown. Fill up blanks in the Cabbage quarter, and keep the hoe moving among all growing crops. Lettuces for spring cutting may now be planted, and the latest quarter of spring Cabbage. Endive should now be lifted as wanted; we put in from three to four dozen at a time in any out-of-the-way corner, but under cover, plunged in any light material, sprinkling powdered charcoal all over the plants; no decay then takes place, and they blanch beautifully; in fact, our opinion is that they look much better than they taste. Cut all unripe Tomatoes, and lay them singly on shelves placed above hot-water pipes in late vineries, where they will ripen nicely. We find the smoother fruits to be preferable to the ridged ones; no moisture can lodge on the former; not so the latter. Our Mushroom beds, spawned on September 15, are now producing a fine crop. Put no fire heat at all in the house, but keep the latter closed until the beds are all well covered with Mushrooms; then a little air adds to their flavour. Outside beds should be kept quite dry; ours are semi-thatched with long rough Grass. Wheat straw is not warm enough for these esculents, but dried Grass teased out makes the best of all coverings. A mat thrown over all adds to the cost, but pays well in the long run. Keep a good supply of Mustard and Cress, and on favourable days tie up Lettuces. At this season a good salad is enjoyed immensely; in fact, no dinner table is complete without it. Finish earthing up Celery; we are now using the produce of our first or early sowing. If time per-

mitted, we would tie up all now with matting, a plan which we consider excellent.

WORK DONE IN WEEK ENDING OCT. 14, 1884. OCTOBER 8.

The weather has been so continuously fine that our work has advanced more rapidly than we expected, and till we get a good fall of rain we can afford to take things easy. Sweeping we always have in plenty, but it is wearying at this season, and therefore we do not attempt to do all that perhaps ought to be done daily, but only such parts as are regularly frequented by the family or visitors. Wheeled manure on to ground from which Peas and Cauliflowers had been cleared, and started trenching it. Three spits and break the bottom is our depth; all the surface soil is shovelled into the bottom by way of getting rid of weeds and seeds, and the manure is put immediately under the top spit. Renewed heating material in fruiting Pine pit, and replunged the plants, and which we now consider safe till about the middle of January.

OCTOBER 9.

At last the rain has come, and with a vengeance, too; three quarters of an inch has fallen since six o'clock last evening. It was badly wanted; and having abundance of inside work waiting to be done, we can contemplate its continuance with pleasure. Finished arranging Apples and Pears in fruit room, and made space for the fruit that has yet to be gathered. Our rule as to arrangement is to have the handsomest fruit on shelves that are most seen, and the opposite in regard to small and specked samples. There can be no objection to thus studying appearances, as it is only what is constantly practised in all other departments of a garden. I ought perhaps to add that every fruit that is at all bruised is placed aside for immediate use. The ventilators are now closed on cold nights, but opened whenever the weather is mild and dry. The Potato stores, too, have been overhauled, bad tubers taken out, and all have been laid thinner and covered with mats. The house is quite dark, but, nevertheless, a mat or straw covering keeps them from the least taint of greening, and by-and-by will be needful to protect them from frost. In the houses we have been busy cleaning plants, whitewashing the walls of early Muscat vinery, and also the Vines with a strong lather of soft soap. Peeling off the outer bark, so generally practised when the Vines are given their winter dressing, we never allow, as to say the least it is unnatural, and I believe injurious at the same time. Where insect pests are numerous it may be justifiable by way of destroying any that have taken refuge in the crevices of the bark, but even then the clean scraping so often done should be avoided. Woodwork and glass have also had a thorough cleaning. Firing to exclude damp from vineries where Grapes are still hanging has been increased, and air is left on night and day. Hamburgs keep most indifferently with us from now onwards, and having tried every known means of preservation without avail, late kinds are being substituted for use from November till new Hamburgs are ready early in May. Gros Maroc, Alicante, and Alnwick Seedling are all three of them excellent kinds to take the place of Hamburgs till the new year or the end of January, and after that comes that invaluable late variety, Lady Downes.

OCTOBER 10.

Rolled all walks—the heavy rain had made this a necessity—to ensure firmness of gravel when dry; besides, frequent rolling saves time that must otherwise be employed in weeding the walks, for rolling, to some extent, prevents the weeds growing. It has been so boisterous, that much as sweeping under trees, &c., was needed, it was not done, but the more profitable work of clearing up and mixing together the summer's accumulation of manure instead, also the tying up a few flower garden plants that seemed likely to be injured by the wind. Put in cuttings of *Gnaphalium lanatum*; this we strike and winter in a cold frame the same way as *Calceolarias*. It

is one of our best plants for forming the outlines of designs, its greyish white colour contrasting well with dark foliage plants such as *Coleus* and *Iresine*, and it harmonises well with any coloured flower except scarlet and crimson. *Leucophyton Browni* (white Whipcord plant), invaluable for carpet bedding, we propagate in the same way, and the cuttings have been put in to-day, and shortly will follow *Calceolarias* and the remainder of *Violas*. It is now so cold that any morning we may expect to find *Dahlias* blackened, and unable to recognise their varieties; hence, we have to-day had all the kinds labelled, except such as are to be destroyed. About a dozen single varieties are all we intend to keep, besides the scarlet *Cactus*, the so-called (but falsely) white *Cactus*, *Constance*, and three or four varieties of bouquet *Dahlias*. The new white *Cactus* variety, Mr. Tait, and the old, but newly resuscitated, variety, *formosissima picta*, are completely worthless, and are doomed to be discarded. Gathered the last Peaches from the open walls, *Princess of Wales* and *Gregory's Late*, and both are of first-class quality. Our best Peaches from the open walls have been the two kinds just named, *Alexandra Noblesse*, *Crimson Galande*, *Bellegarde*, *Walburton Admirable*, *Lady Palmerston*, and the *Nectarine Peach*. The *Nectarine* of all others has been *Lord Napier*, earlier, larger, handsomer, and of higher flavour than any other variety yet sent out, and the tree has an excellent constitution, and never fails to fruit abundantly.

OCTOBER 11.

Finer, very cold, but as yet no frost, and probably we shall now be free from such a visitation till the end of the month. I have noted for years that a wave of cold sets in from the 7th to the 11th of this month, and if this leaves us without nipping the tender plants, we may consider them comparatively safe till quite the end of the month; and in this hope we took just the same pains to-day with flower garden tidying as we have all the summer; bad leaves and flowers and irregular growths of plants have been cleared away, the grass swept and rolled, and vases and baskets picked over and watered. There are still lots of succulents that might with advantage have the side shoots taken off for stock, and these we must try to get done next week; then all the old plants may remain till killed by frost. Sweeping up pleasure grounds completed the labours of outside hands. The houses had some clearing up, though little, there being other more pressing duties to-day in the form of getting under shelter all plants likely to be injured by cold, as well as the looking over of the stock of cuttings in the propagating pit to remove all decaying leaves, which quickly engender damp and sometimes mildew. Strawberries in pots have again been weeded; growth is all we can wish, the crowns being brown and well hardened. The first batch has been put in frames, and will now be kept rather drier (by no means dry) till they are wanted to be put in the forcing house. Watered Pines, Cucumbers, and Melons; tepid water is used for all, and that without exception. Late Melons are good crops. They are just as handsomely netted and the foliage as green and free from insects as any I have previously beheld, so that their excellence is a foregone conclusion; the variety is *Scarlet Invincible*.

OCTOBER 13.

Wind and wet had done their worst to make every place untidy, and being much finer, partial cleaning up—the worst places only—was done; then lifting of Carrots and laying them on the ground to dry after screwing off the tops an inch or two above the crowns. Beet will be left for the present. This root never keeps so well as it does in the ground, but it soon gets frost-bitten, and should either be housed or protected with litter or Bracken as it stands before there is any likelihood of severe frost. Tied up Celery preparatory to giving it the final earthing, which will be done as soon as the soil gets a bit drier. Lifted several young Peach trees that had grown too strong, shortened back

the roots, and replanted them in the same places, making the soil about them very hard by treading. The trees were of course forked out carefully and lifted with good balls of soil adhering, so that they will hardly feel the moving other than the check intended, which is lessened vigour of wood growth and consequently a more certain fruiting condition. Additional trees were also planted in one of the Peach houses, *Early Rivers*, a variety that invariably produces a large number of fruit having split stones, and therefore prematurely ripened fruit, being taken out, and in place thereof *Lord Napier Nectarine* and *Alexander Peach* have been planted. Top-dressed part of fruiting and first succession Pines, renewed fermenting material, and replunged the plants; a bottom heat of 95° does not harm them, but we would much prefer an even one of 75°. After renewal the heat sometimes gets too intense, and if there is any danger of this being the case, it is best not to plunge the plants for a few days till the heat has subsided.

OCTOBER 14.

Put in *Calceolaria* cuttings in a frame; also finished taking offsets from succulents, and now, with the exception of *Echeveria metallica* (so bad to increase), *Echeveria Peacocki*, and *Pachyphyton roseum*, all other old plants will be left to take their chance; the varieties named will be covered up in the beds whenever it appears likely for frost. *Pelargoniums* struck in the open borders are being potted, and those that were put in boxes direct, though still exposed, are so arranged that covering can be quickly applied on there being indications of its being needed. *Marguerites*, *Grevilleas*, *Bouvardias*, and other plants that have been grown in pots for winter decoration have been housed of course, top-dressing and washing of pots having been previously done. Thinned out winter Onions and Endive, and weeded borders and walks in kitchen garden; also cut herbs and bunched them up for drying. The flower garden is still in great beauty; not a flower has yet been injured by frost, though *Coleus* and *Alternantheras* show signs of the changed temperature, and remind us that their place must soon be occupied by other plants or material; hence, we have made note about cutting turves of closely nibbled Heather, and getting in readiness flakes of Sedums, which we use as groundwork for small shrubs that are now in our reserve garden, together with hardy Heaths and spring-flowering plants. HANTS.

OBITUARY.

DIED suddenly at his country residence in Lexington on the 20th of September last, the Hon. FRANCIS B. HAYES, in his 65th year. The leading cultivators around London, as well as Continental florists, will read with regret the death of this estimable man, whose grounds have been enriched with all the novelties and most beautiful hardy shrubs and rare plants introduced into our collections during the last ten years. *Rhododendrons* were his especial favourites, and his collection embraced the most recent of the English and Belgian varieties, as well as all the old and really desirable kinds. His collection of *Camellias* was extensive, and included the largest, finest, and original plants of the American seedlings. He was, with one or two exceptions, the most liberal patron of gardening in America, and it was his delight to show his grounds at all times, and open invitations were extended to the leading amateurs. It was refreshing to follow Mr. Hayes around his extensive grounds (500 acres), and to note the pleasure which every new plant seemed to give him. He had nearly, or quite, completed one of the finest mansions in New England, built wholly from the various kinds of rocks on his own grounds, and in a chaste and original style from plans by an eminent American architect. As president of the Massachusetts Horticultural Society for five years, he has, by his ardour and enthusiasm, infused new life into that association, which for ten or twelve years has scarcely kept up its advanced position. His death is a severe loss, and it will be

difficult to find one to take the place which he has so well and honourably filled. His funeral took place on Sept. 24, and he was buried, agreeably to his last request, in Mount Auburn Cemetery.—C. M. HOVEY, *Boston*.

SOCIETIES.

ROYAL HORTICULTURAL.

OCTOBER 14.

At this exhibition fruit and vegetables formed the main feature, but there was a small gathering of interesting plants, among which the following were awarded first-class certificates:—

SARRACENIA WRIGLEYANA.—A hybrid between *S. psittacina* and *S. Drummondii*. The pitched leaves are intermediate both in size and form between those of their parents. They are about a foot in length, slightly curved, and handsomely netted and mottled with white, and they also possess a reddish tinge. Exhibited by Messrs. Veitch.

LAPAGERIA ROSEA (Nash Court variety).—This magnificent variety, possessed by Mrs. Lade, Nash Court, Faversham, was described a short time ago in *THE GARDEN*. The flowers which Mr. Humphreys showed on this occasion were even finer, both in size and colour, than those he brought to the last meeting. Such an exceptional fine variety worthily deserved the distinction accorded it.

DENDROBIUM PHALÆNOPSIS.—A new species, reminding one of *D. bigibbum*, but different in growth and the flowers are larger. The lateral sepals are broad and round and of a rich amethyst, while the tint of the lip is even much deeper. Shown by Messrs. Veitch.

PTERIS SERRULATA CRISTATA COMPACTA.—A singularly beautiful Fern, different from all the other varieties of *P. serrulata* on account of its dwarf, dense growth. Each frond is broadly tasselled, and the fronds, being short and numerous, form a dense, yet graceful, tuft. It was exhibited by Mr. H. B. May, Edmonton, a market grower, who will no doubt find it an invaluable decorative plant.

DAHLIA FRAU EMIL HEINICKE AND LA PETITE BARBIER.—Both bouquet or pomponé varieties, the first having small, compact flowers of a pleasing rose-pink colour, the other pure white. Exhibited by Messrs. Cannell & Sons, Swanley.

CHRYSANthemum GOLDEN MADAME DESGRANGE.—A new sport from the white *Madame Desgrange*, which is pre-eminently the finest of early-flowering *Chrysanthemums*. The flowers of the sport are identically the same as those of the parent, except that the colour is a clear golden yellow instead of white. It is a valuable acquisition. Exhibited by Mr. G. Wermig, Westfield Nurseries, Woking.

BEGONIA KING OF KINGS AND FELIX CROUSSE.—Two tuberous-rooted varieties. The former is a splendid single sort with very large, finely shaped flowers of a brilliant fiery scarlet. The latter is a double-flowered variety, the blooms of which are large and rosetted, and of a glowing scarlet. In habit and floriferousness it is all that can be desired. Exhibited by Messrs. Cannell.

Among other plants of interest shown were the following: From Mr. B. S. Williams came fine flowering plants of his two lovely new hybrid *Amaryllises*, Mrs. Garfield and Mrs. W. Lee, sister plants, we might say, but it would be difficult to decide which is the lovelier of the two. They both seem to be perpetual flowerers, as Mr. Williams has them in flower at his nursery throughout the year. Other plants from Mr. Williams were *Cyrtanthus Mackeni*, a beautiful South African bulbous plant, with umbelled heads of long curved blossoms; *Corynocarpus lævigatus aureo-marginatus*, a handsome leaved shrub, which no doubt we shall see more of in future; and *Sonchus elegantissimus*, perhaps the most elegant of all Thistles, but very unlike our native representatives of *Sonchus*. Its special

place is a vase on the dining-table, for which purpose there could not be a more suitable plant.

Phalænopsis Sanderiana magnifica is the name given to a superb form of this new Orchid, which Mr. Vanner sent from his collection at Camden Wood, Chislehurst. Roughly speaking, we should say that it is quite three shades darker in tone than the deepest variety of *P. Sanderiana* that has hitherto been shown, and Mr. Lee was supposed to have flowered and shown the darkest up to the present time. As may be imagined, it is a most lovely flower. Mr. Bealby showed another new double *Begonia* named Mrs. Crousse, a further instance of the French raiser's industry. It is, however, not so fine as some of the older sorts. Mr. Sheppard sent from Woolverstone Park two seedling *Crotons* that he has raised. Both were labelled differently, but it was a puzzle to discern the distinction. One was named Sheppardi, the other Gem, the former an alleged cross between *Weismanni* and *majesticus*, the other between *Weismanni* and *Mooreanus*. They both have long leaves like *Weismanni* and very brightly and handsomely barred and mottled.

Messrs. Cannell's exhibits consisted chiefly of Dahlias, cut zonal Pelargoniums, and single *Begonias*, which, by the way, were particularly fine, and being arranged on flat trays were very dazzling. Besides those certificated was *Rose Perfection*, also a first-rate sort of a deep rose carmine. The most striking plant, however, from Messrs. Cannell was the old, but nearly forgotten, Lion's-tail plant (*Leonotis Leonurus*), a Labiate from the Cape of Good Hope. It is an attractive and most distinct-looking plant, having erect slender branches beset with whorls of long reddish orange-coloured flowers like a *Phlomis*. Another noteworthy plant from Swanley was *Begonia diversifolia* (*Martiniana*), a showy autumn-flowering species of slender erect growth, and extremely floriferous. The colour is a clear pink. There were about a dozen plants of it shown.

Dahlias were again shown plentifully by Messrs. Rawlings, of Romford, Mr. Keith, Brentwood, and Messrs. Cheal, of Crawley. Those from the latter included, among a selection of the finest singles, the new *Formosa*, which is unquestionably a first-rate sort. Messrs. Cheal had, besides the Dahlias, a selection of about a score of hardy trees and shrubs, either in flower or with variegated or coloured foliage. Among these were *Prunus Pissardi*, the purple-leaved Plum, the golden Catalpa, the tricoloured Dogwood, golden variegated Snowberry, and *Ceanothus Berthieri*, one of the best of the hardy kinds.

A new *Coleus*, named Duke of Connaught, was shown by the *Coleus* raiser, Mr. King, of Rowsham. It is a beautiful sort with brilliant carmine-tinted leaves edged with gold and green. Mr. Wiggins, of Twickenham, showed a few precocious *Cyclamens* and a few having handsomely marbled foliage. Besides the *Pteris* certificated Mr. May showed another, a crested variety of *P. cretica albo-lineata*. It is elegant and distinct, but not so ornamental as the other.

Fruit committee.—A cultural commendation was accorded to Mr. Pochin, Bodinant, Denbigh, for some wonderfully fine bunches of Muscat of Alexandria and Alicante Grapes, some half a dozen bunches, all large and perfect in finish. Mr. Bull exhibited from Messrs. Lusk, Oakland, California, some excellent fruits of *Kelsey's Japan Plum*, which resembles in colour and size a deep-skinned Nectarine, while the shape is conical. Several sorts of Apples were shown by Mr. Breeze, of Petworth Park, including the Nanny, a first-rate local sort, and another called Cumberland Codlin. Mr. B. S. Williams showed two splendid bunches of the new Grape Winter King, which variety is said to be the result of grafting *Gros Colmar* on *Raisin de Calabre*. The bunches were large, the berries oval, and as black as Sloes. Several new Tomatoes were shown. Mr. B. Dean had a large, new yellow-fruited sort called Prince of Orange, the best yellow we have seen. Mr. Phillips showed his new *Perfection*, and Mr. Miles, of Wycombe, his new Wycombe Abbey seedling. Logan's Seedling Apple was shown

well by Messrs. Dickson, of Belfast, and a fine dish of Margil came from Mr. Williams, Aldermaston Lodge. Mr. Ward, of Bishop Stortford, exhibited his contrivance for preserving cut Grapes, which consists of shallow, oblong, earthenware pans fitted on stands; it is an excellent and simple plan, and ought to meet with patronage from gardeners. Several large miscellaneous collections of fruit were shown. Messrs. Veitch had a collection of 100 dishes, and were awarded a bronze medal. Messrs. Bunyard also took a bronze medal for a large collection likewise. Messrs. Cheal for a collection of Apples and Pears numbering about 100 dishes. Messrs. Paul & Son showed a large collection, and a particularly fine collection of Apples fit for exhibition came from Mr. Sydney Ford, of Leonardslee, Horsham, and who was awarded a bronze medal. A silver medal was taken by Mr. T. B. Thomas, Covent Garden, for eighteen barrels of American Apples just imported in fine condition. The sorts consisted chiefly of Baldwin, Northern Spy, Greening, Golden Russet, Fameuse, and Hubbardson. Messrs. Sutton, of Reading, were awarded a silver medal for an extensive collection of Potatoes, including numbers of new seedlings and the best of the older sorts, making altogether a fine display. A large exhibition of Potatoes was also made by Messrs. Carter & Co., High Holborn, which was likewise rich in varieties.

FRUIT AND VEGETABLE SHOW.

AGAIN there was an excellent exhibition of hardy fruits and vegetables, the chief features being Pears, Apples, and Potatoes. The schedule had evidently been arranged on this occasion with the view of bringing together representative displays of Pears and Apples, and the exhibition so far as it went could not possibly have been finer.

PEARS.—There were classes for collections of fifty sorts from nurserymen, the same number from amateurs, and a class specially set apart for the French and Channel Islands, but these latter did not respond. There were classes for collections of twelve, six, and three sorts, besides one each for the best flavoured variety and varieties that have been certificated by the Royal Horticultural Society. As may be seen by the prize list published in our advertising columns, the competition was confined to a few exhibitors, chiefly from Kent, the most successful being Mr. Roger Leigh's gardener (Mr. Haycock), at Barham Court, Maidstone, who took the first prize in every class he showed, with the exception of the single dish classes. Another successful exhibitor was Mr. Goldsmith, of Hollenden Park, Tonbridge, who, with Mr. Haycock, was so prominent in the hardy fruit show the week previous at the Crystal Palace. Three collections of fifty sorts were shown, and both those from Barham Court and Hollenden Park were grand, even finer than those shown from these places at the Crystal Palace, and having regard to the large number of varieties for a private garden to muster, the collections were remarkable. There was but one collection, that from Messrs. Rivers, in the nurserymen's class which fact speaks for itself of this season's Pear crop. The dozen dishes Mr. Haycock showed for the first prize were without question the finest that has been exhibited in London for years, and it is doubtful if they could be surpassed anywhere. Each fruit shown was fully enough for four persons, and some would turn the scales on three pounds. The sorts were Pitmaston Duchess, Beurré Hardy, Doyenné du Comice, Triomphe de Jodoigne, Beurré Eachevier, Beurré Superfin, Duchesse d'Angoulême, General Todleben, Beurré d'Anjou, Beurré Clairgean, Durandean, Marie Louise. The second dozen was from the Duke of Richmond's garden at Goodwood. Among the most prominent sorts which Mr. Rutland showed in this collection were Pitmaston Duchess, Beurré Diel, Easter Beurré, General Todleben, Chaumontel, Glou Morceau, Marie Louise, and Duchesse d'Angoulême.

The best six dishes from Barham Court were of Conseiller de la Cour, Durandean, Pitmaston Duchess, Beurré Diel, and Beurré d'Anjou. The second collection from Bayham Abbey was like-

wise a very fine one, also from Mr. Goldsmith, Five collections were shown in this class. The three best dishes of dessert sorts were from Mr. Haycock, who had Pitmaston Duchess, Beurré Superfin, and Durandau, Mr. Goldsmith's second best being Beurré Diel, Beurré Superfin, and Louise Bonne of Jersey. An equal second was taken by Mr. Johnson, of Bayham, who had fine samples of Doyenné du Comice, Beurré Superfin, and Duchesse d'Angoulême. Among eight sorts shown for the finest flavour Seckle was first, Gansel's Bergamot second, and Beurré Superfin third. Other sorts shown were Louise Bonne of Jersey, Soldat d'Esperen, and Bergamot. Only one certificated sort was shown, which was Pitmaston Duchess, from Mr. Haycock. The three best stewing Pears were Bellissime d'Hiver, Uvedale's St. Germain, and Catillac, other sorts shown being Grosse Calabasse and Verulam.

APPLES.—There was no class for collections, but one each were set apart for the following sorts: Blenheim Orange, of which there were twenty dishes shown; Cox's Orange Pippin, represented by twenty-three; King of the Pippins, shown by twenty-three; Mère de Ménage, shown by six; Golden Noble or Waltham Abbey Seedling, by seventeen; and Court of Wick, by eight. There was a class for the old Golden Pippin, but of the six dishes shown none represented that variety correctly, thus showing how many spurious Golden Pippins there are in cultivation. There were some exceptionally fine examples shown in these classes, but the prize list will show that the chief of the prizes in these classes were taken by the Kentish growers. In the class provided for any sort of Apple certificated by the Royal Horticultural Society, there were some eight competitors, Mr. Haycock being first with a fine dish of Peasgood's Nonsuch. A marvellously fine dish of Loddington or Stone's Apple from Mr. Friend, Margate, was second, while Messrs. Lane were third with the new kitchen Apple, Prince Albert. Other sorts shown were The Queen, from Messrs. Saltmarsh, Lady Henniker, from Mr. Sydney Ford, and Cellini.

PEACHES AND PLUMS.—The best dish of Peaches among about a dozen was Salway, some very fine fruits of which were shown by Mr. Rutland, from Goodwood. Late Admirable was second, and Walburton Admirable third. Other sorts shown were Lord Palmerston, Princess of Wales, and Golden Eagle. Among a score of dishes of Plums, Coe's Golden Drop took all the prizes, and was shown by twelve in all, other sorts being Blue Impératrice and Rivers' Grand Duke.

OUT-DOOR GRAPES.—Two classes were set apart for these, one for six bunches, the other for two. All the prizes in the class for six were taken by the common Sweetwater variety, of which there were some creditable bunches shown, and the same variety took the prizes in the class for two bunches. Mr. Camp showed some creditable examples of Royal Muscadine, but were a little over-ripe. There was a class for Crab Apples, Siberian or other variety, and several dishes were shown, all being commendable examples. Prizes were offered for Cranberries, but no exhibitor came forward, and only one showed home-grown Oranges or Lemons, and these numbered but three sorts.

MISCELLANEOUS CLASS.—There were more exhibits than usual of a miscellaneous character. The first prize was taken by Mr. Herrin, of Chalfont, who showed fourteen fine Melons, including the new Chalfont Favourite variety. Mr. Harris, of Singleton, Swansea, was second with six fine Pines, and Mr. Ross third with two grand Smooth Cayenne Pines, weighing respectively 8 lb. 4 oz. and 8 lb. 6 oz. Besides these were several other exhibits. Captain Le Blanc's gardener (Mr. May), of Northaw House, Barnet, showed a really fine collection, including Prince of Wales Peach, Blue Impératrice Plum, some monster Pitmaston Duchess Pears, Coe's Golden Drop Plum, and Victoria Nectarine. Mr. Johnson, of Bayham Abbey Gardens, showed a fine large Tomato named Bayham Seedling, a new sort seemingly of first-

rate quality. Mr. Miles, of Wycombe Abbey, showed several dozen fruits of his new Wycombe Abbey Tomato, which for evenness of size could not be surpassed. Mr. S. Ford, Leonardslee, Horsham, showed a dish of Red Currants in perfection, also Morello Cherries and Siberian Crabs.

Vegetables.—There were eight exhibitors of collections of eight kinds, the finest being that from Mr. Miles, Lord Carington's gardener, at Wycombe Abbey, which in every sense was all that could be desired. His selection of sorts were Stamfordian Tomatoes, fine in colour and of extra size, this dish of eighteen fruits being one of the strong points of the collection; Cave's Pinesfield Improved Onion, apparently an ally of the Brown Spanish, the bulbs being very solid and weighty; Canadian Wonder Beans, an excellent Bean both for exhibition or the dinner-table; Allan's Champion Peas in the way of William I. in appearance, but with better filled pods, evidently a good Pea for late work; Lady Paget Potatoes, partaking of the Lapstone in shape, a good dish; Veitch's Exhibition Brussels Sprouts, of extra size, yet solid, also a good dish; James's Intermediate Carrots and Tender and True Cucumbers, of good table size, being fine examples of what Cucumbers should be when fit for use. From the Earl of Radnor's gardener, at Coleshill House, Mr. Haines showed a capital representative collection, which was an excellent second. The strongest points in this lot were Major Clarke's fine solid red Celery; Autumn Giant Cauliflowers, good in colour, very firm, and close; Reading Onion, a fine selection of White Spanish, and an excellent dish of twelve Schoolmaster Potatoes. Mr. Phillips' third collection from Dr. Baber's garden, at Meopham, contained some finely grown, long red Surrey Carrots; Phillips' Perfection Tomato, an excellent kind, resembling the Stamfordian in appearance. In another collection from Mr. H. A. Brassey's garden, at Preston Hall, were capital dishes of Ashleaf Kidney Potatoes from tubers planted in July last, and likewise Nantes Horn Carrots, which we should imagine were sown during the same month.

POTATOES.—The competition in the six classes provided for Potatoes was not so strong as at the Crystal Palace last week, but many of the leading exhibitors were, however, quite up to their usual form. In the large class for fifty varieties, Mr. Kerr, of Dumfries, was first with a capital all-round collection. The most prominent sorts were, among kidneys, Lady Truscott, Magnum Bonum, Wonderful Red, Wiltshire Giant, Dargavel Beauty, Defiance, Red Fluke (very taking), Cosmopolitan, and Sir Garnet Wolseley; whilst of rounds, the best were Duke of Albany, King Noble (very fine dish), Vicar of Laleham, Tiftie's Annie, Reading Russet (fine), Lord Rosebery (of Gramplan type), Manhattan, and Schoolmaster. Mr. Dean's second prize collection was very close to Mr. Kerr's. Of kidney-shaped kinds the best were Edgescote Purple, Chanceller (a promising kind), Beauty of Hebron, Princess of Wales, Cardinal (a fine red), American Purple, Lady Truscott, Magnum Bonum, Edgescote Seedling, Snowflake, Trophy, Snowdrop, Fenn's Bountiful, and Prizetaker; of rounds, Early Border, Fillbasket, Bedford Rose (a fine late kind), Schoolmaster, The Dean, Reading Russet, Porter's Excelsior, and Vicar of Laleham were some of the best dishes. Three collections only of fifty kinds sorts were shown, the number evidently being too many, except for the largest growers.

In the following class Mr. Dean won the first prize for twelve kinds suitable for garden culture. He showed an excellent assortment of the best kinds, each dish of which was of first-class quality. The sorts selected were, of kidneys, Lapstone, Snowflake, Snowdrop, Cosmopolitan, Woodstock Kidney, Beauty of Hebron, and Ashleaf Kidney; of rounds, Sunrise, Reading Russet, Radstock Beauty, Matchless, and Vicar of Laleham. The second prize went to a collection of excellent quality from the garden of Col. Cartwright, Eydon Hall, Northampton (Mr. Hughes, gr.) This selection contained Edgescote Purple, Snowdrop, Prizetaker, Myatt's Prolific, Cardinal, and Edgescote Seedling

among kidneys, and Sutton's Favourite, Reading Russet, Early Regent, Porter's Excelsior, The Dean, and Red Emperor. The latter kind should not, we think, be included in the first twelve chosen for garden culture. Equal thirds were awarded to Mr. Kerr and Mr. Howard, seven collections in all being staged.

The next class for twelve kinds suitable for field culture was not so well contested, but the quality nevertheless was good, Mr. Dean again taking the premier place with Magnum Bonum, Chanceller, Cosmopolitan, Woodstock Kidney, Beauty of Hebron, and Snowdrop; The Dean, Vicar of Laleham, Reading Russet, Reading Hero, Schoolmaster, and Adirondack rounds; Mr. Howard taking second, and Mr. Kerr third prizes in the same class.

A class was also provided for English raised varieties with pedigrees attached to the names of each sort. In this class Mr. Dean was again first with a high class selection, having fully complied with the schedule requirements in giving the requisite information as to pedigree in each instance. The following kinds shown were all of his own raising, viz., Chanceller, President, Harvester, Recorder, Standwell, Bedford Rose, Alderman, London Hero, Rosebud, Cardinal, Sunrise, Prime Minister, Cosmopolitan, The Dean, Lilywhite, Rufus, and the Lord Mayor. Sorts from other raisers were Reading Russet, International, and Prizetaker, all raised by Mr. Fenn; Clyffe Hall, Pride of Clyffe, Progress, Wiltshire Giant, and Perfection, by Mr. Lye; Edgescote Purple, by Mr. Wiles; and Vicar of Laleham, by Mr. Peake, completed this collection of twenty-seven dishes. The second prize was awarded to a smaller collection from Mr. Ross, which was interesting inasmuch as each kind was of his own raising, Woodstock Kidney in nearly every instance being one of the parents. A similar class was provided for American varieties, but only one collection of about ten kinds was shown, and this did not comply with the schedule with regard to the pedigree. Mr. Kerr was the exhibitor, but no award was made, as the pedigrees were not mentioned. In a class for twelve varieties for late use Mr. Dean showed for the first prize fine samples of Magnum Bonum, Chanceller, Wiltshire Giant, Reading Hero, Prime Minister, Schoolmaster, Mr. Bresee, Vicar of Laleham, Bedford Rose, The Dean, Manhattan, and Beauty of Kent; Mr. Kerr being second, and Mr. Prangnell third.

Salopian.—The Liverpool Chrysanthemum Show will take place in St. George's Hall, November 15 and 26.

Chiswick trials (E. H.).—Apply to Mr. Barron, superintendent of the Royal Horticultural Society's Gardens at Chiswick, who will give you the information you seek.

Hybrid Columbine (Nemo).—The plate was drawn in Messrs. Veitch's nursery, who will give you the information you require.

Rockwork.—Mr. Pulham, of Broxbourne, writes to say that the gardens at Nevill Court were laid out by Mr. Thomas, and not by Mr. Marnock, as stated (p. 366), and that the fine rockwork there was formed by him; and we may add that it is in his best style, the artificial portion being indistinguishable from that which is natural.

Names of plants.—*R. P. Gregson*.—Masdevallia maculata.—*C. M. (Ruston)*.—Appears to be a species of Montbretia. We will endeavour to find the specific name.—*M. E. B.*—Skimmia japonica.—*J. A.*—Senecio pulcher.—*E. F. C.*—Red Dogwood (Cornus sanguinea).—*E. W. Lowe*.—Dendrobium album.—*R. W. H.*—Pandanus graminifolius.—*J. W. R.*—Eccremocarpus scaber.—*G. H.*—1, Oncidium Forbesi; 2, Miltonia candida.—*K. J. S.*—Aster Amellus, Cratogeomys coccinea (Scarlet Thorn), Chrysanthemum coronarium fl.-pl., Begonia Diegi.—*H. D. E.*—Oncidium tigrinum.—*H. K. (East Farleigh)*.—Probably Oncidium sphegiferum, but cannot be certain without fuller material.—*S. D. R.*—Aster Novae-Angliae roseus.

Names of fruits.—*Alpha*.—1, Cellini; 2, Hanwell Souring; 3, Northern Greening; 4, Franklin's Golden Pippin.—*D. J. G.*—1, Hawthorne; 2, Golden Noble.—*G. C.*—Cathead.—*G. J. B.*—Fondante d'Automne.—*M. P. N.*—1, Cox's Orange Pippin; 2, Blenheim Orange; 3, Minchal Crab; 4, Royal Somerset.—*G. W. E.*—Not known.—*J. Sale*.—1, not known; 2, Cellini.—*H. L. E.*—1, Allen's Everlasting; 2, not known; 3, Bedfordshire Foundling; 4, Hanwell Souring.—*J. Crook*.—1, Hanwell Souring; 2, not known; 3, Mannington's Pearmain.—*H. Taylor*.—1, Hollandbury; 2, Winter Nonsuch.—*W. H.*—1, Dumelow's Seedling; 2, Minchal Crab; 3, Scarlet Nonpareil.—*M. E. S. (Lolywell)*.—Gravenstein.—*P. Wiles*.—1, Egg of Paradise; 2, London Pippin; 3, Court of Wick; 4, Downton Pippin.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

MISSING PLANTS.

WHAT an interesting and useful feature in the garden would be a column for lost and missing plants. The number of good things that have dropped out of cultivation during the last quarter of a century is far larger than most people suspect. Change in fashion—for there is a fashion in flowers as in other things—may have something to do with the matter, but the missing subjects are in most cases plants not quite hardy enough to wholly take care of themselves, or, perhaps, slightly difficult to propagate, and which in consequence never were really very common. As an instance, I may quote some of the herbaceous Lobelias. What percentage, I wonder, of the present generation of hardy flower cultivators know the tall, showy, blue *L. amœna*, introduced from America more than seventy years ago. The number must be few, for it is never heard of in current floral literature, yet in the not quite hardy section of border flowers there are few finer things to be met with. It is just such a plant as we would expect to find nestling in some sweet out-of-the-way rectory garden in Devon or Cornwall, waiting to make its re-appearance when called upon, through some such agency as that which I suggest. It would also seem to be unknown to the trade, judging from the fact that I have never yet found it in any English catalogue. Twice I "ordered" it from nurserymen who said they could procure it, and in both cases the plants sent turned out to be *L. syphilitica*, a quite common and much inferior species. There is also in hiding somewhere an orange-coloured species, *L. colorata*, though I must confess I have never seen it. Could it be "resurrected" and crossed with *L. fulgens*, or the handsome *L. Tupa*? What a noble array of hybrids our skilful florists might place before us. Another plant that may well be thought to be as extinct as the dodo for all that is seen of it, is the little dark purplish double Rocket (*Hesperis matronalis*). This variety—for it is nothing more—is much dwarfer and has a denser spike than any of those forms commonly grown. Unfortunately, it is very subject to the attacks of a species of Cabbage grub, and the probabilities are that they have all but worried it out of existence. To save these and similar plants—more than stove or greenhouse plants—from passing away into the limbo of the lost, I think a little corner, such as I suggest, would prove an interesting nook indeed.

R. D. TAYLOR.

AUTUMN-BLOOMING CROCUSES.

FEW flowers are more beautiful or harmonious better than the "sere and yellow leaf" than the Crocus. Where provision has been made for ample supplies of these, gardens are all ablaze with their charming and delicate shades of bluish purple and snow-white flowers. One of the best for this purpose is *C. nudiflorus*, a gem in its way. It is just now opening its pale purplish flowers, which are set off to good advantage by the exquisitely fringed, orange-coloured stigmas. This kind has also the

recommendation of increasing rapidly underground. *C. asturicus* is also a beautiful species, and well worth cultivating in quantity. *C. Clusii*, which is dwarfer and more compact than any of the above, should find a place where the Grass is short. *C. iridiflorus*, a handsome, large, bright purple-flowered species, has also a remarkable fringed stigma. It is useful, owing to its size, for planting amongst the ranker Grass, a position in which it has a fine appearance. *C. medius* is a charming purple-flowered Crocus, which, although limited in its distribution, has been much sought after, and may now be had in quantity. It commences to flower in October, and is very floriferous. *C. Salzmanii*, a pretty lilac or blue-flowered kind, flowers well into December in mild seasons. *C. longiflorus*, a pale blue sort, is also very desirable. Amongst white autumn-flowering Crocuses, *C. ochroleucus*, creamy white with orange throat is very handsome; it is remarkable for the length of its flowering season, continuing in bloom often well into the new year, and unless the frost is very severe its flowers escape injury. *C. hadriaticus*, another pure snow-white Crocus, is distinct enough from the above to deserve a place in every garden, as is also Boryi and vitellinus, both of which are very handsome.

K.

New Roses.—Thinking that it may interest your readers, I send you herewith a list of the best new Roses raised in Lyons, which will be sent out shortly. I have given the descriptions as accurately as I can, and added the names of the raisers: Tea Annette Murat (Levet), lemon-yellow, very full, firm shape, free bloomer, seedling from Gloire de Dijon; Tea Alexandrine Bruel (Levet), very pure white, fine shape, full, free bloomer, also a seedling from Gloire de Dijon; Tea Charles de Legrad (Pernet fils), fine shape, nearly full, light crimson passing to deep rose, fine trusses, free bloomer; Tea Souvenir de Gabrielle Drevet (Guillot), large, full, fine shape, white shaded light salmon, centre rose; Bengal Mdm. Jean Sisley (Dubreuil), medium size, full, fine shape, pure white, very large trusses, constant bloomer; Bourbon Mdlle. Berger (Pernet père), medium size, full, fine light rose; Hybrid Perpetual Baronne Nathaniel de Rothschild (Pernet père), very large, globular, nearly full, fine tender rose; Hybrid Perpetual Amiral Courbet (Dubreuil), fine shape, full, medium size, dark pink, fine scent, free bloomer; Hybrid Perpetual Mdm. D. Wettstein (Levet), good shape, cherry red, constant bloomer; Hybrid Perpetual Docteur Dor (Liabaud), very large, full, dark cherry red, shaded darker form, and scented like a Tea; Hybrid Perpetual Etendard de Lyon (Gonod), large, fine shape, purplish crimson, free bloomer; Hybrid Perpetual Mdm. Pitaval (Liabaud), large, full, light cherry red; Hybrid Perpetual Mdm. Stingue (Liabaud), very large, purplish red, free bloomer; Hybrid Perpetual Mons. Hoste (Liabaud), large, full, velvety crimson, very fine; Hybrid Perpetual Souvenir de Labryère (Gonod), fine shape, vivid rose, centre darker, very free bloomer; dwarf Perpetual Polyantha and Mignature (Aléatière), very dwarf, flowers small, but very full, very fine in shape, flower-buds rose, changing to white edged rose when expanded, large stalks, abundant and constant bloomer, very fine; Hybrid Perpetual Gloire Lyonnaise (Guillot), large, full, and fine in shape, vivid creamy white or straw, centre yellowish, fine scent, very free bloomer, flowers solitary.—JEAN SISLEY, *Monplaisir, Lyons*.

Cypripedium Godefroyæ.—This lovely Lady's Slipper, one of the latest additions to the genus, has just flowered in France, and proves to be in every way superior to what it was thought to be judging by a solitary flower that had previously been produced by an imported and non-established plants handsome even though that was. The plant which has just bloomed was exhibited at the last meeting of the Société

Centrale d'Horticulture, in Paris, by Mons. Bergman, gardener to Baron Alphonse de Rothschild, at Ferrières, who has been most successful with it. It is unanimously acknowledged to be a grand Lady's Slipper, not only as regards the size of the flowers, but also and especially on account of their very pretty markings, which in their way are quite unique. The specimen in question, though small, has produced an extraordinary fine bloom, measuring 2½ inches in height and a good 2 inches in breadth. It is similar in form to that of a large *C. niveum* with lateral sepals gracefully recurved and a long narrow slipper in the way of *C. concolor*. The colouring of the spotting with which the divisions are almost entirely covered is rich and beautiful. It is deep magenta-purple, forming a pleasing contrast with the creamy white ground colour. It is undoubtedly one of the most striking of recent introductions, being graceful in aspect and apparently a free bloomer. We shall probably soon be enabled to admire the beauty of this fine Lady's Slipper in this country, as Mr. Lee, of Leatherhead, is the fortunate possessor of a strong specimen of it, which is showing flowers. This species is likely to remain scarce in collections for some time to come, as its native habitat, besides not being generally known, is difficult of access.—S.

Hybrid Begonias.—The enclosed Begonia flowers may interest you. In 1882 we fertilised a white-flowered seedling from B. Rex with pollen from B. Davis, the result being fifty plants producing most lovely pink flowers and very ornamental foliage. Only one plant differed from the others, and that produced white flowers. These correspond very closely indeed with the B. Rex seedling just mentioned. Would you kindly say whether you know of any Begonias in commerce producing flowers or foliage at all like the specimens sent?—SUTTON & SONS, *Reading*.

** After examining carefully the specimens which accompanied this letter and comparing them with the species of Begonia from which they are said to have been obtained, we are inclined to suspect that some error has been committed either at the time when the flowers were fertilised or in the names of the plants operated upon. In the first place, it is well known that the South American tuberous-rooted Begonias, which form a distinct group, and which include B. Davis, have hitherto refused to cross with any species outside the limits of their own group. All our popular tuberous-rooted kinds are the progeny of plants of this group exclusively. No cross, or rather no plant, is known in which the characters of any one of the species of this group and another distinct species are combined. In Burbidge's "Propagation and Improvement of Cultivated Plants" there occurs a list of the hybrids raised by Col. Trevor Clarke, and in this list we find it stated that crosses were obtained from B. discolor × B. cinnabarina, B. insignis × B. cinnabarina, B. nitida × B. cinnabarina, and several other equally surprising combinations. None, however, of these crosses have ever been recorded as being in cultivation, so that if ever they existed they were too weak to thrive, or else the characters of one of the parents became obliterated. Begonia specialists have long been trying to break through the barrier which stands between the tuberous-rooted section and the shrubby evergreen species of the Begonia family, but hitherto no good or permanent results have been obtained. Let us now turn to the specimens supplied by Messrs. Sutton. The white-flowered one mentioned above is almost typical B. sinuata; in fact, it is near enough to be considered the type plant itself. The second plant, with pink flowers, is probably a cross of some kind, but we doubt very much its being the result of crossing B. Rex with B. Davis. The specimens before us are apparently from an erect-stemmed plant; the leaves are uniform, sinuately lobed, dentate, 4 inches wide, dark olive-green above, the veins paler, and deep red below. Flowers in cymes (? axillary); each pedicel subtended with a pair of thin bracts; ovary of female flowers large and broad-winged, one wing longer than the others and broadening upwards from the base; each has

five petals. Male flowers not seen. Peduncle, pedicels, and flowers deep pink, almost scarlet. In the form of the ovary, the colour of the flowers, and the dark red of the under side of the foliage, these specimens show some touch of *B. Davisii*. But *B. Davisii* and *B. Rexii* have no stems, and are characterised by thick fleshy leaves and hairy leaf-stalks. If we might hazard a guess at the parentage of the plant from which the specimens before us have been gathered, we would say that flowers of *B. sinuata* had been fertilised with pollen from *B. Davisii*, and the result showed a slight touch of the latter parent. Of course, this is but a guess, as without better materials and more reliable information a safe decision on this point is impossible. We may, however, add that whatever its parentage may have been, this plant has distinct and ornamental characters, and may prove a beautiful garden Begonia.

PLANTS IN FLOWER:

Gentian and Sternbergia.—Mr. Groom sends us from his nursery at Gosport a gathering of these two beautiful hardy flowers, though their colours are not such as harmonise, the contrast being too violent. Mr. Groom observes that the Gentian (*G. acaulis*) has taken quite a fresh start since the drought broke up and is now again in full bloom.

Autumn Roses.—A gathering of very fine Roses has reached us from a correspondent in Scotland. All the blooms are perfect and for the season finely coloured. The most prominent sorts are *Mdlle Eugénie Verdier*, *Ferdinand de Lesseps*, *Madame Charles Wood*, *Victor Verdier*, *Charles Lefevre*, *Xavier Olibo*, *La France*, *Sir Garnet Woseley*, *Cloth of Gold*, and *Souvenir de la Malmaison*—all seemingly excellent sorts for autumn flowering.

Sternbergia lutea.—This bright yellow Crocus-like-flowered plant is now in charming condition, and is a favourite with everybody. I find it to be a good plant for placing in Rose beds or similar situations where it can enjoy the luxury of being left alone. In such positions it soon spreads out into good-sized clumps, and at this season makes a bright, spring-like display where little else can be grown. It is not at all fastidious as to soil or position, on the contrary, it grows freely in any fairly good garden soil. It appears to be benefited by being planted moderately deep, say 6 inches from the surface.—J. G., *Hants*

Datura meteloides.—This fine species has flowered abundantly this season from Californian seeds planted in the open ground last year. The flowers are 7 inches or 8 inches long, white, tinged with a beautiful violet-blue, and produced in succession from August till now. It appears to be perennial, and a stem lying in the ground is rooting freely. It agrees exactly with the description in *Asa Gray's new "Flora of North America,"* vol. ii., pt. i., p. 240. It has just ripened seeds with me, and I shall be pleased to send a few to anyone wishing to grow it, who will send me a stamped and directed envelope.—ALFRED R. WALLACE, *Frith Hill, Godalming.*

Prince Consort Violet.—Under this name Mr. Underdown sends from Colehayes, Bovey Tracey, a beautiful single Violet, one of his own raising. The flowers are large, of an intensely rich purple with light centres, while the fragrance is most agreeable. "It is the best single Violet," says Mr. Underdown, "I ever met with. I have tried all the singles, and now I have only this one, as it is far in advance of the others in size of flower and freedom of blooming. With this and Marie Louise I can gather Violets during nine months of the year. Of course, the greatest quantity of flowers at one time and the largest blooms would be about March or April." Mr. Underdown considers Marie Louise the best double.

Feathered Celosias.—It is not often that such admirably grown examples of these beautiful greenhouse annuals are seen as those which were shown last week at South Kensington by Mr. Beard, from Mrs. Adams' garden at Ashton-on-Mersey. So remarkably well grown and flowered were they, that the committee accorded to Mr. Beard a cultural commendation. The plants were comparatively dwarf, and each was terminated

by a large, dense, plummy mass of flowers. The plants were also remarkable for their rich and varied colours, amongst which were crimsons, reds, and yellows, and some intermediate tints. Graceful plants such as these are capable of adding much beauty to the conservatory or greenhouse at this season.

Chrysanthemums.—We are reminded of the return of the Chrysanthemum season by an uncommonly fine boxful of incurved and Japanese varieties from Mr. Underdown, Captain Levett's gardener at Colehayes, Bovey Tracey. Though so early, every one of the numerous blooms sent would stand well on an exhibition table in November, every flower being large and perfect in shape and rich in colour, the result of a judicious system of disbudding. The most prominent sorts sent are *Mrs. George Rundle*, pure white; *Mrs. Dixon*, a golden sport of the latter; *Mr. Bunn*, bright yellow; while among the Japanese sorts are the beautiful early white *Elaine*, large and fine; and the lovely *Baronne de Prailly*, with its large, rose-blush flowers.

Antholyza paniculata.—Flowers of this pretty plant have been sent to us by Mr. C. Miles, who collected it in the Transvaal, and in whose garden at Royston it has grown 3 feet high, bearing *Gladiolus*-like leaves, and a long panicle of brown, red, and yellow flowers. Mr. Miles says it is growing out-of-doors, has increased rapidly, and, judging by the specimen before us and his description, the plant must be quite at home. The *Antholizas* constitute a small genus of Iridaceae plants closely related to the *Gladiolus*, but more like the *Tritonias* and *Montbretias* than the *Gladiolus*. It is likely to prove a useful addition to the several good bulbous plants which we already grow in our outdoor borders, *i.e.*, *Montbretia*, *Tritonia*, *Watsonia*, *Gladiolus*, and the old *Antholyza* *æthiopica*, which is something like Mr. Miles' plant, but altogether smaller. Mr. Miles says the leaves of his plant are serrated. We suspect he means plicated, as no member of the large order Iridaceae has serrated leaves.

Coronilla Valentina.—A well-flowered branch of this was sent to us the other day by "W. C. R.," who stated that it was a seedling from *C. glauca*; *C. Valentina*, however, it certainly is. It is a native of South Europe, where it is a common plant, and it is also cultivated in various gardens in this country. It was even grown by Gerard as far back as 1596. It was figured in the *Botanical Magazine*, t. 185, ninety-two years ago, and it is also figured in Loudon's "Arboretum." Miller grew it in the Chelsea garden, and described it in his "Gardener's Dictionary." It would be difficult to find an exotic plant with a record dating further back than this *Coronilla*, and which at the same time still retains a place in English gardens. The most prominent character by which the difference between *C. Valentina* and *glauca* is easily seen is that of the stipules, which in *C. glauca* are small and almost linear, whilst in *C. Valentina* they are large and almost orbicular. *C. Valentina* is neither so graceful in habit nor so large in foliage as *C. glauca*, nor are the flowers so large, bright, or fragrant as those of the latter. It has erect shoots and looks like the Rue Plant (*Ruta graveolens*). Both it and *C. glauca* are half-hardy, and are best when grown in pots out-of-doors in summer, and taken into a cool house during winter.

Swertia bimaculata.—The genus *Swertia* is composed of about fifty annual or perennial herbs with opposite leaves, and blue, yellow, or white flowers, which are borne in large paniculate heads. Few of the species are good enough to be cultivated as garden plants, and these few are limited to what are generally known as *Ophelias*, now included in the genus *Swertia*. These are all annuals with erect stems and variegated or panicled flower-heads. *S. alata*, with yellowish flowers, *S. angustifolia*, with purplish flowers, and *S. paniculata*, with flowers white spotted with purple, are sometimes met with. *S. corymbosa*, a strong grower with blue flowers, and *S. umbellata* with white, blue-veined flowers, also have

been in cultivation. In *S. bimaculata* we have a pretty addition to the above kinds. It is now flowering at Kew. The stems are 3 feet high, and are clothed on the upper half with ovate, strongly nerved, dark green leaves, the lower leaves falling away as the flowers develop. The flowers are in a large panicle a foot long and nearly as much wide, and are three quarters of an inch across, perfectly flat, the five petals being white, the upper half covered with little dots of purple, and exactly in the middle of each petal is a pair of green viscid spots. The form and position of these glandular spots are important characters in this genus. Although best when grown in pots in a cool house, this species, and indeed all of those above mentioned, thrive well in a sheltered position out-of-doors. *S. bimaculata* is flowering on the rockery as well as in a cool frame at Kew.

NOTES OF THE WEEK.

October Raspberries.—We have in our gardens a fine of Raspberries at present in full bearing. We send you a few of the tops in fruit.—YOUNG, OAKENHEAD, AND CO., *Cork.*

* Very good fruit indeed for the end of October.—ED.

Pitmaston Duchess.—I send you a fruit of this Pear weighing $\frac{1}{2}$ lb. We have had several on the tree about the same size. It is growing on a south-east wall, and is comparatively young. It bore a good crop last year. The fruit sent is the largest I have seen. When better known than it is this variety of Pear will, I think, be largely planted.—J. ANDERSON, *Clifton Hall, Notts.*

* A noble fruit, resembling a Uvedale's St. Germain in size rather than delicious desert Pear, which it is. It is a handsome yellow-skinned fruit, here and there tinged with russet, and excellent in quality.—ED.

Forget-me-nots in bouquets.—Miss Cypher, of Cheltenham, who invariably takes prizes with her bouquets when exhibited at shows, is particularly fond of using Forget-me-nots in their composition. The stems are cut short and a few of the blooms are wired in light clusters, and of the choice flowers used I think they are the prettiest and sweetest looking.—CAMBRIAN.

Fruit and vegetable show.—We are informed that the exhibition which will be held on Tuesday, Wednesday, and Thursday next in the conservatory of the Royal Horticultural Society, being the last of the series of the most successful meetings which have been held in connection with the International Health Exhibition, will be of more than usual interest and extent. It has been decided by the authorities to allow it to remain open until the close of the "Healtheries" at 10 o'clock p.m. on Thursday, the 30th inst. All exhibits to be removed on Friday morning, October 31.

The Sea Buckthorn.—We have received from the gardens of Baron Ferdinand Rothschild, at Waddesdon Manor, Aylesbury, the finest berry-laden branches of Sea Buckthorn (*Hippophae rhamnoides*) that we have ever seen, and they are all the more remarkable inasmuch as Waddesdon is far inland, while the Sea Buckthorn is essentially a seaside shrub. Such finely-berried specimens must, indeed, be a great ornament to the grounds at Waddesdon at the present time. The branches sent consist of numerous long twigs covered for about a foot of their length with crowded clusters of bright orange berries about the size of Peas. These berried twigs are terminated by the current year's shoots, furnished with shining, silvery, Willow-like leaves. Seeing that the Sea Buckthorn succeeds so well at Waddesdon, there is no reason why it should not be planted in every garden, for there are few shrubs whose berries are so attractive at this season. It would be interesting to know under what conditions it is growing at Waddesdon.

Mark's line divider.—This little instrument, recently invented and patented, is useful for dividing any space into a number of equal parts. It consists of a hinged rule with firm joint, the limb fitted to slide in an undercut groove upon a plain rule. The latter has needle points on the underside to prevent it from slipping when placed in any position. One of the limbs of the rule is

divided on both edges into eights, quarters, half-inches, and inches, which are consecutively numbered so that any set may be taken. It will be found convenient not only to engineers, but for garden plan drawing in cases where lines have to be divided into equal parts for setting out planting. For drawing parallel lines for walks, roads, &c., it is more applicable than an ordinary parallel ruler.

FERNS.

BEST CULTIVATED FERNS.

(Continued from p. 323.)

OPHIOGLOSSUM.—This interesting, though unpretentious, genus consists of plants of most extraordinary habits and of a generally peculiar appearance, unlike that of any other known Ferns. The Botrychiums most closely resemble them, and they are also found in somewhat similar situations, that is, growing amongst Moss and Grass in moist meadows. None of them, it must be admitted, are what may be termed very ornamental, but several of them should nevertheless be grown, as they deservedly are in some of our best collections simply as curiosities. It is a genus the members of which are widely scattered all over the globe; yet, with the exception of *O. pendulum*, which is found throughout the tropics of the eastern hemisphere, and consequently requires warm treatment, all the other known species are distributed over Europe and America, and need no artificial heat; America, indeed, is particularly prolific in Ophioglossums, the majority of which come from Florida, Louisiana, Alabama, Texas, and Arizona. They are useless as pot plants, and do best when planted out in the rockery, where a naturally damp spot should be selected and prepared for them. The compost should consist of fibrous loam and half decayed Sphagnum in about equal proportions, with an admixture of sand, in which their fleshy roots plunge with avidity. Ophioglossums are not aquatic plants; therefore, although requiring a damp situation at all times of the year, they must not, on any account, be planted where there is stagnant water.

O. BULBOSUM.—This is one of the smallest of the North American species. It is found in old fields and low, sandy grounds from South Carolina and Florida to Louisiana. It has even been imported from Chili. From four to six of its curiously shaped fronds are produced in one season from a solid and subglobose rootstock, which is furnished with only a few fleshy descending roots, and from the centre of each of these barren, nearly round fronds rise the fertile ones, which have an entirely different character, and are of short duration only.

Fronds from 2 inches to 6 inches high; sterile segment set below the middle of the plant, about half an inch long, somewhat fleshy, broadly ovate or cordate and abruptly contracted at the base into a short petiole. Fertile spike nearly 1 inch long, rather thick, apiculate, and its peduncle generally three or four times longer than the common stalk, round, and light brown in colour.

O. LUSITANICUM—This seems to be only a very permanent variety of the exceedingly cosmopolitan species *O. vulgatum*, from which it differs mostly in the size of its singular fronds, which are smaller in all their parts than those of *vulgatum*, and produced in greater quantities, the plant being generally furnished with five or six of them. They are also a little different in form, being long-stalked and spear-head shaped, and the fertile segments are borne on longer stalks, and are always well above the fronds. Like the species from which it seems to have sprung, this dwarf-growing kind is found scattered all over the globe, and grows luxuriantly among some short herbage on the summit of rocks in the vicinity of Petit Pot Bay, on the south coast of the island of Guernsey. It requires greenhouse protection in winter if cultivated in pots, and should then be potted firmly, and particularly well drained.

Fronds ovate, borne on comparatively long stalks; barren segments fleshy, rarely exceeding 4 inches in height; fertile ones borne on longer peduncles and keeping well above them. Sporangia situated on one row of about fifteen capsules on each side of the fertile spike. Colour light green.

O. NUDICAULE.—This North American species, probably the smallest kind known, seldom exceeds 4 inches in height. It may to the casual observer appear only a variety of the preceding, but it differs from it greatly, inasmuch as it has no bulbous rootstock, all roots starting from a somewhat succulent, but straight and downward-growing, stump. Another distinctive character is the length of the fertile segment or spike of sporangia, which rests on a very slender peduncle, which, contrary to other known species, is usually several times as long as the sterile segment. The fronds, which are of a bright pale green colour, number about from four to six on one crown, and the fertile segments make their appearance in October and November only. This little species may be plentifully met with on sandy borders of ponds in South Carolina, Georgia, Alabama, and Florida.

From a short and fleshy rootstock rise some five or six fronds of an elliptical-ovate shape, acute at both ends, sub-sessile near the base of the plant, and borne on fleshy stalks, part of which is generally buried in the soil. Stalks and fronds are both of a fleshy nature. Fertile segment starting from the centre of the sterile one, and standing high above it, apiculate, and borne on a long, slender stalk. Spores sub-globose and closely set on each side of a central vein, smooth and trivittate, as they are also in *O. bulbosum*.

O. PALMATUM.—This is the most interesting, as well as the most showy, of all the North American species, and differs from all other kinds from the same country in being thoroughly epiphytal. It is found growing wild in the axils of the Palmetto in Florida. It is also a native of Southern Brazil and Mexico, where, according to Tweedie, "it only grows in the axils of old leaves of a species of Palm," and more rarely on moist schistose rocks. It is a stronger growing kind than any of the species just described, and has a totally different appearance, the great weight of its generally palmate fronds giving them a gracefully pendent habit. These fronds, which are of a light green colour and rather fleshy, are borne on round stalks varying in length from 6 inches to 15 inches, and are somewhat tough in texture; besides being generally fan-shaped, they are cuneate at the base, and, unlike all others, deeply lobed into a variable number of tongue-shaped segments. It is an extremely variable plant; therefore in a collection of dried specimens many odd shapes occur. The fructification of this curious plant is most singular, and is produced in the form of small spikes forming miniature catkins about 2 inches long and borne on peduncles shorter than themselves. These arise mostly from the incurved edges of the frond, just where it begins to widen into the common stalk, sometimes from the stalk itself. This must be grown suspended in a cool house.

Rootstock erect, a little longer than thick, profusely rooting along its sides; roots several inches long and dichotomously branched. Several fronds produced at a time, the base of which is covered by long and entangled, minute, chaffy scales of a ferruginous colour; they are divided into several segments from 2 inches to 8 inches long, nearly or quite an inch broad, obtuse or acute, and often forked at the tip. The fertile segments, which vary from two to six on each frond, are rarely produced from the upper surface of it, but start each one from a vein some distance from the margin; they are sometimes forked, but generally simple, and are manifestly appendages of the frond and not special fronds partly consolidated with the sterile lamina. Each spike contains about thirty sporangia on each side.

O. PENDULUM.—This is the only species which requires stove treatment. It is a thoroughly epiphytal kind from the Malayan Archipelago, where it is found plentifully on branches of trees from which its curious sterile fronds, which are much longer than the fertile ones, hang gracefully down and often attain a length of 3 feet. In Madagascar the same plant, or at least one which only differs from it in size, is found decorating the forest trees on which it grows with green ribbons some 12 feet in length and 2 feet in breadth, while in Ceylon it rarely exceeds 6 feet. This shows how extremely variable it is in size according to the habitat in which it is found. Although many times imported by different firms, it is even now found only in very select collections. True, it is not very handsome, but it is extremely interesting. In its natural state it is generally found growing along with *Platyserium grande*, a plant to which

it bears a great resemblance—i.e., as far as the drooping portion of it is concerned. As in *Platyserium*, its roots, which are of a fleshy character, are deeply imbedded in a spongy mass of Moss and roots. To cultivate it with anything like success it requires either to be suspended in a basket or grown in a warm house on a board in about equal parts of spongy peat and Sphagnum Moss.

Fronds produced sparingly; the barren ones simple, entire, linear-lanceolate, much longer than the fertile segments, which are stipitate, spike-like, and simple, seldom exceeding 6 inches in length and hang from the midrib of the fronds about a foot from the apex. Colour bright green.

O. VULGATUM.—Although found in some parts of England, this curious species deserves a place among exotic Ferns on account of its wonderfully cosmopolitan character. It is not only found wild in Europe, Madeira, and the Azores, but also in Western Asia, and it is plentiful in North America from Canada to Texas and Arizona. It is commonly found growing in low meadows and moist pastures, but sometimes also on dry hillsides, and its size generally varies according to the elevation at which it grows to such an extent that, although it is undoubtedly one and the same plant, the fronds of specimens found in grassy damp meadows at West Felton, Shropshire; Blymill, Staffordshire; or Wrexham, in Wales, are four times as large as those from specimens gathered in Dalmeny Wood, near Edinburgh, or near Richmond, in Yorkshire. The common stalk is usually a little shorter than the peduncle of the fruiting spike, but this proportion varies much in different specimens. Sometimes the peduncle of the fruiting spike is so short that the latter scarcely rises above the apex of the sterile segment which is sessile on the side of the stem. A character peculiar to this species only is that its roots, which, as in all others, are of a fleshy nature and extend horizontally from the rootstock often to a distance of 6 inches, occasionally form an adventitious bud which produces a new plant at some little distance from the old one. The fronds for the year grow from just below the apex of the rootstock, and although generally one frond only is produced each season, two and even three of them are sometimes found on one plant at the same time.

Fronds from 3 inches to 12 inches long, of a bright green colour; sterile segments fleshy, sessile near the middle of the plant, ovate or elliptical in shape. Fertile spike 2 inches to 4 inches long, apiculate, commonly long-stalked, and overtopping the barren segment. Sporangia situated on each side of the spike about twenty on each side. The spores are pale yellow, smooth, subglobose, and trivittate as in other species.

PELLEA.

Extermination of native Ferns.—It has been said lately that Windermere Lake has become a gigantic cesspool; how far this is correct it is not for me to say. But this may be said, without fear of contradiction, that there has of late years, and still keeps going on, a gigantic system of plunder or extermination of many kinds of native Ferns from their natural habitats. In a large fissure where *Polystichum angulare* not long ago could be seen growing in abundance not a single plant is now to be seen. In another ravine where *Scolopendrium*, *Polypodium Phegopteris*, *P. Dryopteris*, and several other varieties of Ferns could be seen and admired growing in all their natural beauty, the place that once knew them, alas, now knows them no more. Then comes the noblest of our British Ferns, *Osmunda regalis*. This Royal Fern used to be plentiful by the sides of rivers and in swamps; but, like the other kinds mentioned, it is also rarely to be found, unless it be in some secluded spot where human footsteps seldom find their way, and these spots, like their inhabitants, are by degrees getting fewer. The number of visitors and tourists to the various parts of the lake district increases every year, and to supply their wants Fern dealers keep springing up like Mushrooms in all directions. All this means a diminution in extent of many kinds, and a total extermination of others from their natural abodes.—W. B., Windermere.

TWO GARDENS.

It would be curious to contrast the different aspects which garden vegetation presents in different countries, though in Europe they are not so noticeable as they are when one goes a little further afield. And yet to spend a night and day in getting from English gardens to those of Southern France is to experience a very pleasant change! The fashion of gardening for a good many years past has tended to make things monotonous, even in widely diverse places. Where the old mixed and, so to say, natural way prevails, the greatest amount of contrast is seen; bedding is the same everywhere almost.

We remember seeing a very pretty arrangement necessitating a finer climate than ours almost, and that was a bold group of fine foliage plants taken from the hothouses and green-houses in a large garden in France, and placed out-of-doors for the summer. The plants in pots and tubs were arranged in a graceful and bold manner on a high bank, the foliage serving to hide the said pots and tubs. They were under and near deciduous trees for the sake of shade and shelter. The sun was a good deal warmer than we have it. The grouping was very good, and the whole effect quite charming.

In countries warmer than ours, hothouses and conservatories are not much frequented in summer, except by the gardener; whereas a beautiful group, such as we describe and illustrate, is a very important addition to the outdoor garden. In our country, however, such things cannot be as often practised, though some graceful examples may be seen about London and elsewhere.

Forming a complete contrast with this graceful group is the little garden of an English parsonage (p. 355), so simple and unaffected in all ways, from the "old-fashioned" Vines on the wall to the simple disposition of the ground. Than such gardens there are none more beautiful. There is no obtrusive design, and the hardy flowers scattered about usually give the happiest effect. An English cottage garden and an English parsonage, or small country house garden, are often among the most beautiful, from the absence of apparent effort as regards elaborate or showy design. In them one can grow what one wants, from a Cypress to a rock plant, without having to consider the "proprieties." It is doubtful if the art of man can ever produce anything more fitting for its purpose.

"A DICTIONARY OF ENGLISH NAMES OF PLANTS" applied in England and among English-speaking people to cultivated and wild plants, trees and shrubs, by Wm. Miller, will shortly be published by Mr. John Murray.

OUR GARDENS IN WINTER.

WHEN one remarks the absence of interesting features in the majority of gardens in winter, more especially in the outdoor ornamental department, and remembers what a wealth of subjects of a striking character a walk through a nursery well furnished with hardy trees and shrubs reveals, it seems difficult to understand why owners of gardens do not oftener avail themselves of such a choice of subjects for the embellishment of their gardens than they do. The scarcity of such subjects in private places can only be accounted for in one

render them effective, and the arrangements should be such as to give scope for different habits both as to form and colour. Let us take the Holly as an example of the multitude of foliage variations that might be obtained. In Hollies we have deep golden as well as silver variegation. The Milkmaid varieties with their irregular blotches in the middle of the leaves instead of round the edges are very pretty, and there are various other forms which I need not stop to mention sufficient in themselves when judiciously associated with other plants to make

pleasing and lasting combinations. In the *Elæagnuses*, too, the irregular variegation is most striking in winter. It is not too much to say that they are but little inferior to a well-coloured *Croton*, yet they are seldom met with. Then there are the various forms of the *Euonymus*, some of which are very beautiful, and in all sheltered situations they will withstand a severe winter, as will also the *Osmanthus*, a shrub not only remarkable for its distinct variegation, but in habit of growth it is dense and compact. Groups of such plants effectively arranged and displayed at different points about the grounds render a walk round the garden at all times interesting. In gardens of moderate extent there is no reason why we should not also have groups of the various varieties of Yews. Amongst these the pretty little *Taxus adpressa*, a native of Japan, is very effective, as is also the Weeping Yew. The golden variety and the silver variegated are both distinct and useful. The Irish Yew is well known, but not so much so the Canadian species, which is a low-growing bush, very distinct in appearance, and admirably suited for the front lines of shrubberies or for a position near a walk or Grass.

AMONGST OTHER ORNAMENTAL SHRUBS may be mentioned the various forms of *Berberis*, some of which flower very early in spring, and are valuable on that account. *Cotoneasters* are also effective shrubs, growing, as they do, in a variety

of forms; *C. microphylla* is a beautiful weeper, as well as a low-growing bush; *C. Simonsi* is very effective, and capable of being grown in a variety of forms. During winter it is gaily decked with bright red berries. The *Juniper* family is rather a large one, but it contains a variety of forms, which, if artistically arranged in a group, would make a pleasing picture. The erect-growing *J. chinensis*, when compared with the low-growing form of *J. prostrata*, commonly known as the Carpet Juniper, serves to show the wide difference in habit that may exist in a genus. Nearly allied in character to these are the *Retinosporas*. In



Group of fine-leaved plants placed out for summer among deciduous trees in a Continental garden.

way, and that is that it appears those most interested are not aware how wide a range of choice there is amongst hardy evergreen shrubs and striking trees, which, if judiciously used, would be effective during the dull months of winter.

VARIEGATED PLANTS alone might be made capable of lighting up the dreary aspect of our gardens at a time when the surroundings are dull and ineffective. As to the best positions to be selected for the sort of plants here alluded to, the front lines of a shrubbery border will do if no better are to be had. It would, however, be preferable to have them grouped in such a way as to

R. plumosa we have an effective shade of blue, while *R. pisifera* is remarkable for its strong tint of yellow. Amongst Cyresses there are several that are very beautiful. *C. Lawsoniana erecta viridis*, although formal in growth, are sure to attract attention, owing to the charming depth of lively green which they always wear. *C. Corneyana* is also elegant in growth, and perhaps in some respects the most remarkable of all of them. But I need single out no more; enough have been named to show that there need be no dearth of attractive objects in the outdoor garden, even in the dullest of winter months. We cannot dispense with shrubs with which we have for so long been familiar, but we can do with fewer of them, and thus make room for new material, and in the end it will be found that our gardens have been benefited by the change. J. C. C.

NOTES FROM CRANMORE HALL.

THE gardens connected with this beautiful Somersetshire residence are not very extensive, but they are particularly well cared for. The flower garden, especially when I saw it, was remarkably bright, each style of bedding being successfully carried out. The most striking beds were those filled with *Calceolaria amplexicaulis* edged with *Iresine brilliantissima* (a good form of *I. Herbsti*); a mass of *Lobelia fulgens* edged with a broad band of *Lenophyton Browni*; and *Salvia patens* grouped with the more commonly employed summer bedding plants. Immense annual Sun-flowers were distributed about the shrubberies, and these, with great numbers of all sorts of Dahlias, helped to make the grounds gayer in September than at any time previously. Overlooking the flower garden and connected with the house are an orangery and conservatory. In the former the Orange



Garden at Ovingham Parsonage, where Bewick went to school (see p. 354).

trees are of great height and in excellent health, and the large tubs in which they are growing being on wheels, they are easily moved out when necessary. Instead of ordinary conservatory climbers, the gardener (Mr. Moore) has covered the roof with Grape Vines. The varieties are Lady Downes and Mrs. Pince, which annually perfect serviceable crops, and a better example of the combination of the ornamental and the useful could not well be adduced. The conservatory was designed with the view of harmonising with the residence. It is a handsome, roomy structure, but, as generally happens under such circumstances, it is not the best of places for plant culture. The climbers in it, which are in excellent health, form a conspicuous feature. They include large plants of *Begonia fuchsioides*, *Tacsonias*, *Cobæas*, *Tropeolums*, and *Bougainvilleas*; while on the back wall are floriferous plants of *Heliotropes*, double-flowered zonal *Pelargoniums* (notably *Guillon Mangilli*, one of the best for the purpose), and other plants. A basket filled with freely fruited plants of *Fuchsia procumbens* was singularly beautiful. *Brugmansia arborea* planted out in the central bed is fully 18 feet high, with a good spread of branches. This annually produces three crops of its great white bell-shaped blooms, and is perhaps when well treated one of the noblest conservatory plants which we possess. *Benthamia fragifera*, also planted out, is about 15 feet high, and has set a heavy crop of its

Strawberry-like fruit, but these are not prized for dessert purposes. Grouped amongst various ordinary flowering and fine-foliaged plants I noticed several plants of a very distinct form of the common Balsam. The seed of this variety was sent from India, and all the plants are exactly alike and remarkable for their free-branching habit, narrow or Willow-like leaves, and the colour of the flowers—a peculiar shade of carmine. All that is wanted is an improvement in the form of the flowers and more variety in the way of colours. If these points could be effected, a very superior strain of Balsams would be the result. In

THE PLANT HOUSES may be seen the usual variety of fine-foliaged and flowering plants, and all in good condition, notably some large batches of *Poinsettias*, *Euphorbia jacquiniæflora*, *Gesneras*, and some well-prepared table plants. A small newly-erected fernery at the back of other houses has been very quickly made attractive. The Ferns are planted out, while the back wall is furnished with a series of cast-iron troughs or gutters, such as are usually fixed under the eaves of houses. In these are planted a variety of trailing plants, such as *Lycopods*, *Pellionias*, *Fittionias*, *Panicums* and *Tradescantias*, a very pretty effect being thus produced. I know from experience that all such

plants grow much better in these gutters than they usually do when planted in soil enclosed by strong wire netting, and also that from such plants thus grown can be cut quantities of foliage useful alike for vases and dinner-table decoration. It is for this purpose that the fernery was formed, and a similar structure or larger, according to the demand for greenery, might with advantage be erected in every garden.

FRUIT GROWING is well carried out at Cranmore, both under glass and in the open. The pot Vines raised from eyes this season are remarkably fine and well ripened; and it is a fact for which I can vouch that Mr. Moore annually succeeds in perfecting heavy crops on pot Vines. In the late vinery are good crops of Mrs. Pince's Muscat, Black Alicante, and Gros Colmar, and the flavour of the latter grafted on a Black Hamburgh is surprisingly good. Melons are also well grown, and such sorts as *Blenheim Orange*, *Eastnor Castle*, and *Burghley Pet* are all finishing off heavy crops. The last-mentioned is small and round, ribbed, prettily netted, and good in quality. It is, perhaps, one of the prettiest Melons grown. Cucumbers are in demand all the year round, principally for cooking, and I never saw Cucumbers in better condition at any time of year than those now fruiting at Cranmore. Bananas are also grown for dessert, though necessarily in limited numbers, and they are by no means so insipid in taste as those imported generally are. The variety grown

is *Musa Cavendishi*. Suckers of this taken off an old "stool" early in the season are grown on rapidly; at present they are in 15-inch pots, and early in the year they will be shifted into tubs or larger pots, a rich, loamy soil being given them. This shift induces fruiting, and the fresh soil affords a good root-run, and as a consequence materially strengthens the clusters of fruits, which usually perfect in time to afford several dishes when most wanted, viz., for the shooting or winter parties. At present there is a cluster of fruit on a plant about seventeen months old which will weigh nearly or quite 50 pounds. Musas are worth growing in large plant stoves on account of their noble appearance, and probably they would be more generally grown if all were aware how easily they can be fruited, and how much liked they are by those who acquire a taste for them. There are several Peach houses at Cranmore, and at the time of my visit the trees in the earliest house were being lifted and replanted; being still in full leafage, they would speedily form fresh roots into the new border, and the trees will thus be in a condition to start and fruit next season to their full extent, renovation being thus effected without the loss of a crop. Early Beatrice and Early Louise are grown for the

earliest supplies, but their fruits are rather small; Crawford's Early is much liked, and this is perhaps the best of the yellow-skinned Peaches; Grosse Mignonne and Royal George are still considered indispensable, and for late crops Barrington and Late Admirable do good service. Pit-maston Orange and Lord Napier Nectarines are the favourites, the latter being considered the best early sort.

LATE STRAWBERRIES are a speciality at Cranmore, and remarkably well they are grown, too. The variety relied upon is the now well-known Vicomtesse Héricart de Thury; this is found to be the only variety that

really well repays the trouble that it is necessary to take in order to secure a second crop during the same season. After the first crop is gathered from the plants in pots, they are hardened off and then transferred to open quarters. Part of them are planted out on a good piece of ground, and from these are gathered during September and October many really good dishes of fruit. A certain number of plants is plunged in their pots near a long path, and sufficiently deep to ensure their rooting over the tops of the pots into the good soil around them. They are kept regularly supplied with water, and in due time they push up a great quantity of bloom. Before severe frosts are anticipated they are lifted, and have the surface-roots reduced; they are then set in saucers on suspended shelves or along the front of the Peach houses. They receive abundance of water and liquid manure, and do not appear to suffer at all from the severe reduction of the roots. The strong bunches of fruit which they produce are supported with neat stakes, and being distributed evenly and well above the foliage they present a very attractive appearance. During October, November, and December a considerable quantity of fair sized fruit of excellent quality is obtained from the successional batches, and the plants being in 6-inch pots, some of the best are usually placed on the table when "parties" are held. With more house room Mr. Moore could easily maintain a supply of Strawberries all the

year round, but the forcing houses, which are the proper places for the very latest, are somewhat small at Cranmore. Mr. Moore's method of preparing Strawberries for early forcing may be worthy of mention. One or more rows are left untrimmed in the autumn, and these afford a number of well-rooted runners in the spring, which are detached in March and planted on a cool border, where they form strong plants during the summer. About the last week in July they are potted up, and when I saw them late in September they had thoroughly filled the pots with roots, and the crowns were remarkably strong. This plan is a very simple one, and may well be generally imitated. The work of

RENOVATING THE FRUIT TREES on open walls has been gradually and thoroughly done, the Pear trees especially being now in excellent condition. When first taken in hand they were furnished with great ugly spurs, and the fruit produced was invariably of very poor quality. The whole of them were found to be rooting much too deeply, and the first step towards renovation was taken during the late autumn and early winter months. A deep trench was cut round each tree at a distance of about 6 feet from the stems; all roots found were sawn through, the trees were next completely undermined, and all the deep running roots severely shortened. After all preserved roots spreading from the ball were properly cut over to facilitate healing, they were re-laid in good turfy loam, taking care to bring them up as near the surface as possible. Nothing was done to the spurs at this time, but the following winter all the longest were sawn off nearly close to the main branches, and the trees, by this time being well established in the new soil, had become sufficiently vigorous to push out a number of shoots wherever pruned. In this way the long spurs were gradually got rid of, the trees were soon furnished with abundance of fruit spurs, and the crops of such sorts as Marie Louise, Glou Morcean, and Easter Beurré I have seen on these trees were of the finest quality. In a generally well-cropped kitchen garden what most impressed me was a bed of

SPINACH BEET. This, as grown at Cranmore, is of the greatest service; it is an excellent substitute for Spinach, and when cooked not distinguishable from it. This Spinach Beet is treated exactly as ordinary Beetroot, but is perfectly hardy, and yields an almost unlimited supply of green leaves throughout the winter; in fact, the more the leaves are picked, the more productive becomes the Beet. Mr. Moore procured his stock of it from a friend in the neighbourhood who has grown it for many years, and it proves better than anything of the sort he can purchase. I experience the greatest difficulty in preserving the winter Spinach from slugs, but for the future Spinach Beet will be grown, and thus one more difficulty will be removed. W. I. M.

New garden plants.—I should like to direct attention to two plants which are much admired by visitors to our garden at Oakwood. The first is the dwarf Pampas Grass (*Gynerium argenteum pumilum*). This was exhibited at South Kensington by Mr. Noble, of Bagshot. The two plants I bought have a beautiful effect, and, not having the bulk of the old Pampas Grass, can be placed where a great plant would be unsuitable. The second consists of the seedling *Pernettyas* exhibited by Mr. Davis, of Hillsborough, County Down. We have two beds of them of about fifty plants each; the plants at Oakwood placed in full sun have berried most beautifully, and are of all colours, from the palest pink to almost black; those at our cottage garden at Weybridge were planted in partial shade, and have hardly any berries. Visitors constantly ask where these new *Pernettyas* are to be got. I would strongly recommend any grower to put the plants in full sun, at any rate at first. The only puzzling fact is that isolated plants of the old *Pernettyas* in our wood have berried well, though getting but little sun. We have cut a fine spike of *Eryngium pandanifolium* for my friend, Mr. Hancock, to be

preserved in the Newcastle Museum. It was about 10 feet, and the stem at base about 4 inches in diameter.—GEORGE F. WILSON, *Heatherbank, Weybridge.*

TREES AND SHRUBS.

WHAT AND WHEN TO PLANT.

WHERE new grounds have to be laid out, or additions or alterations effected, a very common mistake is to put off the work of preparation until the planting is necessarily driven too late, by which means much loss and annoyance usually results. The subject relating to the comparative advantages of autumn *versus* spring planting of Evergreens has often been discussed with the apparent result of the advocates of each season failing to become converts to the views of their opponents. Yet those who are not prejudiced and have had enough opportunity of seeing the results following the planting of Evergreens in autumn, with the exception of some Conifers, as compared with spring, can scarcely fail to see that the advantages are much on the side of early autumn for the work, and that the old maxim applied to deciduous trees about their growing of their own accord if planted before Christmas, and requiring to be made to grow if planted afterwards, holds good with Evergreens with this difference, that their planting should not be delayed nearly so late in the year as the deciduous section. A plea frequently urged for delaying the necessary preparations for work of this kind is that where such operations as draining and trenching have to be carried out, in many places the work is more difficult, and necessarily costs more when the land is hard and dry than if deferred until softened by the autumn rains. Yet this short-sighted economy has often to be paid for dearly, not alone by the actual deaths of the evergreen shrubs and trees, the timely planting of which has thus been delayed, but equally so by the dwindling condition many that are not killed outright frequently remain in for two or three years afterwards. It is scarcely necessary to say that in work of this kind the nature of the land to be dealt with goes far to determine the character of the work that in each case becomes requisite.

DRAINING where needed is manifestly the first operation, and before going further it may be well to say a few words about a mistake often committed in draining where shrubs and trees are to be grown, and through which the work has frequently to be re-done under disadvantages. Draining for ordinary purposes in the ordinary way, so as to get rid of superfluous water, is sufficient; but with land where during the future countless roots thirsting for moisture will be penetrating in all directions, entering every crevice where they can get in, the case is so far different, that a drain alone consisting of the ordinary pipes laid at the requisite depth to receive and carry away the water is useless beyond the requirements of the present, as the roots are sure to get in and choke the pipes. Wherever there is danger of this happening, in addition to the pipes there should be 6 inches or 8 inches of some hard open material laid on them, such as ordinary stone rubble or anything of a like nature that is free from fine matter that is calculated to attract the roots or be liable to get clogged up. By this precaution the roots have less inducement offered them to push near the pipes, and if in time the worst happens, and they enter and choke them, the open material above will afford egress for the water. The little extra cost that the precaution involves should cause its adoption wherever draining has to be carried out in gardens. As to the depth that drains should be made, all that is needful to say is that the contentions that used to be carried on about certain uniform depths in drains for land devoted to agricultural purposes were only remarkable for their manifest unsoundness; no precise depth can be named, as that required in each particular case can only be determined on the spot; all depends on the depth of the surface soil and the nature of the sub-stratum. The same

may be said as regards the distance that drains should be apart. But this much may be said, that the more retentive the character of the land the nearer the drains require to be together, as in such soil the water is so much slower in percolating through it. With respect to the depth the land should be dug, this also requires to be determined by the depth and nature of the upper soil, combined also with that immediately underneath. In trenching for any crop it is not well to get the aerated top soil down too deep, as this usually means bringing too much of the crude under stratum to the top; at the same time, ground if at all heavy and calculated to hold water should be moved as deep, or deeper, than the holes wherein the trees are to be planted need to be made.

WHAT TO PLANT.—This is a wide subject, and one in which the judgment of the operator requires to be largely drawn on. Taking the negative side of the question, there is one safe rule that should never be departed from, that is not to be tempted, through the too prevalent feeling of following the fashion, to plant anything that has given evidence of not thriving well in the locality, and following the same course by only making spare use of such things as are at all doubtful in succeeding, only planting them in positions where their presence will be little missed if they fail. Want of due caution in this matter is often exemplified by the unhappy appearance of unproved novelties that from the fact alone of their being new and rare have been put in the most prominent positions; whereas if any of the well-known, well-proved kinds, whose only fault is their being common, had been used, it would have been a gain in every way. Evergreen trees in moderate numbers and well-chosen positions more or less proximate to a dwelling are necessary, but on that account it does not follow that they should be used indiscriminately in such numbers as in recent times they often are met with. After giving the newer kinds of coniferous trees all that is their due, few will dispute that an old Scotch Fir with a massive straight trunk and proportionate head, and a Cedar of Lebanon that has attained its full proportions, have not yet been matched, nor are they likely to be by any of the many kinds of evergreen trees that during the last thirty or forty years have had so much preference shown them, that few people have thought of planting the old kinds named; and as to Evergreens that attain less proportions, have we anything that surpasses the native Yew or Holly, which in their way hold their own against all comers? Not that I would say anything disparaging of the many fine evergreen trees that during the present century have been introduced, and which deserve planting wherever they can be suitably placed; but when we see preference so far given to kinds that are manifestly inferior, it is well now and then to look facts in the face. Amongst the

LEAST USED OF THE PINES that have been long enough known is *Pinus Laricio* (the Corsican Pine). Its quick growth, tall, statelike appearance, adaptability to soils and situations alike make it a desirable tree for effect, as also for its value as timber. For its healthy, deep green colour, free growth, and hardy, vigorous constitution there is nothing to surpass the Austrian Pine. Its habit of throwing much strength into the lower branches where room is given it in its early stages of growth renders it the best of all the Pines where a permanent mass of foliage is required. The merits of *P. Strobus* (the Weymouth Pine) and *P. excelsa* are sufficiently known not to require comment further than saying that their distinct habit, combined with ability to thrive well in most situations, commend them to planters. *P. Cembra* is also well known; its deep green colour, freedom of growth, and the erect, cylindrical habit it assumes make it as well as the others named desirable for standing in a prominent position. The beautiful Californian species (*P. insignis*) should never be left out where and climate is such that it may be calculated on to bear the severest winters, but, unfortunately, it suffers so much in many parts of even the southern counties as to much detract

from its value; for the lovely green shade of colour it possesses it stands unrivalled where a variety in the Pine family is required. *P. Bungeana*, the Chinese Lace-bark Pine, is worth having; for independent of its curious habit of throwing off its bark, like the native Birch, in broad ribbons of a lace-like character, it is a handsome tree of moderate growth. The different sections of

THE FIRS (*Abies*), as well known, contain some of the most elegant evergreen trees. The common Spruce when seen in its best form, such as where suitable soil and situation, including enough shelter, are present along with plenty of room, from its first being planted, so that its plume-like branches are perfect down to the base, is one of the most beautiful of pyramidal trees. *Abies pectinata*, the Silver Fir, needs no praise; its feathery spreading branches are handsomest in the early stages of growth of the tree; it likes shelter and deep soil, such as are often present in a river valley where the deep alluvial deposit and protection from winds afford what it likes. The graceful habit of *A. Smithiana* (*Morinda*) commends it to all lovers of elegant growing trees; it must not be too much exposed to the wind; it likes good soil, moderately dry; its delicate pale green coloured foliage affords a perfect contrast to the darker leaved kinds. *A. nobilis*, *A. Nordmanniana*, *A. magnifica*, all of which are Silver Firs, have been seen enough of to confirm the high opinion first entertained of their merits; the distinct appearance which these beautiful trees individually possess is not their least desirable property. For the neighbourhood of a walk, where lower growing trees of more bush-like habit are preferable to the taller larger kinds, *A. Pinsapo* will be found suitable. *A. polita* and *A. Parryana* deserve the high opinions first formed of them; their distinct appearance is such as to entitle them to a place where even the most select collection of evergreen trees is attempted. The noble proportions which *A. Douglasi* assumes in its native country may be set down as beyond what is possible with us; nevertheless in the southern and western parts of the kingdom it has a majestic appearance where the situation suits it; but so far as I have seen, however well it may thrive, as soon as ever its top gets high enough to be under the influence of the wind it gets cut. Of all evergreen trees that have been introduced there is none with so distinct an appearance as

ARAUCARIA IMBRICATA, and few if any that almost everyone with a bit of shrubbery seems to have been so determined to have; its distinct character, so different from everything else, never fails in making it effective, and wherever the place is suitable a few examples should be present. Yet with all this it has turned out a somewhat disappointing tree, for in comparatively few places where first planted has it continued to keep on growing, usually thriving well for a time and then getting prematurely round-headed, and making little progress afterwards. No doubt even in the hands of many who might have been supposed to know better it has been mistakenly treated; with it, as with a few other new Conifers, there was an evident disposition to get it on at a rate that partook more of speed than permanence. Prepared sites of rich, deep soil calculated to induce quick growth were often given it. Someone was recently recommending this as a preventive of the loss of its bottom branches. More mistaken advice could scarcely have been offered, as the rapid growth made under such conditions is just the sort that gets killed in exceptionally severe winters; whereas when the soil is not too rich, but of fair quality, with more or less gravel or stone in it and with a rocky or gravelly subsoil, the growth is slower, and the trees do not get injured with a low temperature. The effects of these opposite conditions in the soil I have several times seen in the same grounds. Next to the Lebanon Cedar, and superior to it in rate of growth, stands the

MOUNT ATLAS CEDAR (*Cedrus atlantica*). This fine, hardy, evergreen tree, like the Lebanon Cedar, is so well known as not to require a word from me, only to point out that if it had been as

freely planted during the last forty years as has its more fashionable relation, *C. Deodara*, the grounds attached to a vast number of dwellings would to a certainty in time to come have been better embellished than they now will. Without question, *Cedrus Deodara* is a distinct-looking, handsome tree, that thrives freely for a time where soil and situation suit it; but the winters we now and then get make sad havoc with it, reducing it to a state out of which it often does not grow; in addition to this it has the habit in many places of assuming a premature stunted condition.

OF CYPRESSES, too much cannot be said in favour of *C. Lawsoniana*; it thrives well, and looks well in most places where the necessary shelter, which by far the greater number of evergreen trees require, exists, and without which it is little use planting them. Of the many forms of this Cypress existent, there are none for general purposes equal to the normal green type, although a few of the variegated varieties may frequently be used by way of contrast. *C. Lawsoniana erecta viridis* is likely to be always a favourite with planters where a straight, erect, cylindrical plant is wanted. *C. nutkaensis* (syn., *Thujopsis borealis*) it would be difficult to speak too highly of, for although it has not yet reached in this country the stage in which it may be said to have begun to throw off its infantile character, yet for its beautiful habit of growth and the freedom with which it thrives in most soils, and its generally vigorous constitution, it may be set down as standing in the front rank of the evergreen trees of this century.

LIBOCEDRUS DECURRENS (*Thuja gigantea*) has now been proved so far as to enable a fairly reliable estimate to be formed of it; its growth is not such as to lead to the supposition that it will ever reach a great size in this country; nevertheless, it deserves a place wherever evergreen trees of the character under notice succeed; the erect cylindrical outline which its branches assume is quite distinct from that of all others. The little space it occupies makes it much more suitable for planting near dwellings than many others that are used in preference to it. Of the *Retinosporas* in their many forms, so elegant and plume-like in their younger stages, it is doubtful if they will long be held in such estimation as their first appearance led people to suppose. Many of the oldest examples now to be met with show a disposition to get prematurely thin and ragged to an extent that sadly mars their beauty. The apparent ability in the green forms to stand our severest winters is so much in their favour, as to make them deserving of being used in moderate numbers.

SEQUOIA (WELLINGTONIA) GIGANTEA.—It is doubtful if any tree ever introduced to this country made such a sensation at the time as did this gigantic denizen of the world-famed Californian valley, and to which the subsequent disappointment has been quite equal, for not only will it fail to ever be a giant in this part of the world, but the wretched stunted appearance which it oftener than otherwise in a few years is reduced to is such that frequently necessitates its removal. In a sheltered place near a river, where there is a deep rich alluvial soil, not subject in dry seasons to get so devoid of moisture as in ordinary situations, it keeps on growing longer.

S. SEMPERVIRENS.—This is evidently destined to be a better tree in this country than the *Wellingtonia*, as well as being less formal in habit; but for it ever to have a chance of attaining anything approaching its natural gigantic proportions it must obviously have a deep valley sheltered from the western gales, as if at all exposed its top goes at once.

THUJA GIGANTEA.—Should this free-growing Californian tree continue to thrive well as it gets older, and maintain the elegant appearance which it has whilst young, it will, indeed, be an acquisition. But at the rate at which it grows it should evidently be planted where it will have high ground to shelter it at the side from which the gales come, or it can scarcely fail to get injured. Enough has been seen of it to stamp it as one of

the most elegant of trees in its early stages of growth.

THUOPSIS DOLOBRATA.—From the bushy, compact habit of this Japanese *Arbor-vitæ*, it has proved itself to be well adapted for use where larger growing trees are unsuited, such as in the immediate vicinity of terraces, walks, or buildings, where trees of large growth soon get beyond the bounds that can be allowed them.

The above is not intended to be an exhaustive list of this class of evergreen trees, but those favourably noticed are a selection which anyone deficient in acquaintance with trees may rely on as representing the best and most desirable kinds, and that, moreover, may be reckoned upon to thrive freely in situations adapted to their requirements. T. BAINES.

ARAUCARIAS IN THE WEST OF SCOTLAND.

THERE are many fine specimens of *Araucaria imbricata* in this country, and from its various habits of growth one feels inclined to think there are different varieties of it. Here we have about a dozen specimens, all different, some being contorted in a singular manner, others stiff and formal, while others again are most graceful in habit. We have one in particular which for perfection in general outline and furnishing nothing could excel. This specimen is 35 feet high; the stem measures 4 feet 2 inches at 3 feet from the ground, and has a circumference in spread of branches, which rest on the green sward, of 63 feet. The branches are all beautifully curved, and furnished with numerous side shoots, in many cases numbering over forty, all gracefully pendent.

IN LIFTING AND PLANTING these and kindred subjects great care is necessary, in order to prevent barking or mutilating the roots. In planting, the most should be made of every root, and in furtherance of this end, all the fibres should be neatly spread out and equally divided over the space allotted to them. They should be spread out at full length, and not be twisted or cramped into a given space. Make the pit large enough to hold the roots comfortably, and leave a foot or two clear all round them. Before proceeding to plant, place in the pit a quantity of good friable loam, leaf-mould, and burnt woodashes in equal parts; also have a quantity of the same material in readiness to place over the roots, and apply it liberally. As the planting proceeds make all firm by steady packing and trampling, working the soil well in amongst the roots. In the case of large plants the stakes should be in position before the roots are covered. I have no belief in the single-stake system of supporting top-heavy plants, nor do I like the three-stake bolster plan; both injure both stem and roots, and, moreover, serve no good purpose. To prevent oscillation—the cause of many failures—drive in three stakes at equal distances apart round the plant and sufficiently far from it to give a good angle; then fully half way up the stem place some matting or other soft material to prevent chafing, and on the outside of this place a piece of leather or wax-cloth firmly bound round with a piece of wire; in this fix three eyes, each facing the stakes already driven in, and from these eyes stretch a strong wire to each stake, and fix it with a staple; this done, proceed to drive the stakes again with caution, so as to place no undue strain on any of them, but have all tight alike. When finished, supports of this kind have a neat appearance, the stakes, being quite overhead in the ground, and the wires tight are scarcely visible, even at a short distance off, and what is of primary importance, blow as it may, the wind has no effect on a plant thus fettered, at least as far as its roots are concerned.

SOIL.—Most growers of Conifers are of opinion that this *Araucaria* must have a deep alluvial soil in which to grow, and doubtless it would do well in such a soil, but we have no such material here for it. All our *Araucarias*, as well as other Conifers, are growing on a very indifferent soil indeed. In the pinetum and different parts of the grounds where *Araucarias* are growing we have only from 12 inches to 15 inches in depth of light,

gravely loam, resting on a bed of gravel. The exceptionally humid atmosphere of the west coast of Scotland seems peculiarly favourable to all evergreen trees, and perhaps, this accounts partly for the vigour and equally-balanced growth of our Araucarias. Be that as it may, one thing is certain, and that is that in all my travels I never saw such healthy specimens of this Chilean Pine as may be seen all over the west coast of Scotland.

Glenfuart, Greenock.

J. PROCTOR.

WINDSOR FOREST.

AT a recent meeting of the Windsor and Eton Scientific Society, the Rev. Dr. Gee, vicar of Windsor, read a paper on "The Trees of Windsor Forest." In the course of his remarks he said our knowledge of the forest dated from 1820, when the present arrangement was introduced. In 1814 Kent reported that there were 50,000 good trees, yielding a million and a-half cubic feet of timber; 1900 acres were sold, £25,000 worth of timber cut down, and 3000 acres planted. The Great Park now consisted of 3000 acres, the Little Park of 500, and the Forest of 10,000 acres. The soil was poor and wet, and little to be envied by agriculturists. Of the three principal trees—the Oak, the Beech, and the Elm—the Oak might be claimed as an aborigine, although much of the old Oak timber in this country was not of the same kind as that now in use. The Beech tree claimed as its own the neighbouring county of Buckingham. The Elm was undoubtedly the shortest-lived of these three trees, its limit being about 200 years, while as a rule it began to decay at the age of 80 years. The trees in the Long Walk were planted in 1680 by Charles II., and the walk was perfected by William III., though the ground was not appropriated until the reign of Queen Anne. The number of the trees, which, though very fine, were inferior to those at Eton College, was said at one time to be 1652, the double avenue being 70 feet across. The finest grown Oaks by far were just at the back of the Rhododendron Walk. One was 70 feet high, and rose 40 feet before it threw out a single branch; and there was a tree 100 feet high near Cumberland Lodge. In Cranbourne Chase stood the largest tree known in the Forest. It was hollow, and might have existed 800 or 900 years, its greatest circumference being nearly 40 feet. Outside the Forest Gate, at Ascot, was a fine specimen of a tree of middle age. It was in about the 600th year of its life, and was about 27 feet or 28 feet in circumference.

Celtis occidentalis.—A specimen of this tree growing on Main Street, West Springfield, is notable for its great size and also for its perfect shape. The following careful measurements show that it is not the "small or middle-sized tree," as described in Gray's "Manual": Circumference 4 feet from the ground, 12 feet 3 inches; height, 75 feet 6 inches; spread of branches, 80 feet. This locality seems to be a favourable one for the development of this tree. Though only a few specimens have ever been known here, they have all reached a great size. One is standing in Springfield nearly as large as the one whose measurements are given above. Two formerly stood on Main Street, which were a little larger than either of these now standing. They received special mention in Emerson's book. They were still vigorous and sound when cut down a few years ago. The two large ones now standing are apparently in all the vigour of middle life, making considerable growth each year. It is to be hoped that they will be spared to reach their greatest possible development.—*Torrey Botanical Club Bulletin.*

Benthamia fragifera. This has fruited with us this season for the first time, although it has been grown here for twenty years. It is trained to a wall facing the east, and is in a very cold position. There are now great numbers of flower-buds upon it, and therefore if we get a mild winter there is a good prospect of its fruiting much more freely next year than this. Although we have never succeeded in fruiting it before, it is not an unusual occurrence for it to do so in other places in Somersetshire.—*J. C. C.*

Abelia rupestris.—One of the most persistent little blooming shrubs that we possess is this Abelia; it has been in flower nearly three months, and still there are blossoms to come. It is a neat-habited shrub, of rather spreading growth, with deep, glossy green leaves and tubular-shaped, sweet-scented blossoms, borne in clusters on the point of every shoot. The flowers are about an inch long, and in colour white tinged with pink. This shrub was introduced into England from Japan about thirty years ago by Fortune, and is fairly hardy, except during severe winters. It makes a good covering for low walls. It is a shrub that should be made a note of, for it will succeed under ordinary conditions, and flower well where simply planted in the open ground. Cuttings of the half-ripened shoots root readily enough if kept close till that takes place.—*ALPHA.*

Cupressus nutkaensis.—The dark olive green which pervades the whole growth of this Cupressus gives it a distinct appearance. I believe it to be the best of the family; indeed, I know of no other that attains such stately dimensions and retains such a tree-like character. One noticeable feature about it is that as it reaches a good age the main branches bend upwards and the small ones, or lateral growths, droop down. It is not a scarce tree, though it is not so often seen as it should be. What enhances its value is that it is very hardy. No spring frost or cold winds ever do it any harm, and it always retains its colour. Judging by a specimen of it which we have here that has been planted rather more than twenty years, and which is now more than 30 feet high, I should say that trees of it may be expected to ultimately reach a height of 60 feet or more.—*J. C. C.*

Variegated Dogwood.—Even with the scorching weather we have experienced this summer, the variety of Cornus Mas known as elegantissima aurea has not been in any way injured, but, on the contrary, its variegation has been rendered still more striking. It is with us one of the most effective of variegated shrubs, the golden margin to the leaf being broad and clearly defined, while the more exposed parts of the foliage become suffused with a beautiful reddish tint, which is much heightened when in the full sun. On dry sandy soils it sometimes suffers during the summer, but where sufficiently moist to prevent such a thing occurring, exposure to strong sunshine does not hurt it. Another prettily variegated Cornus is a form of the red-barked Dogwood (*C. sibirica*), in which the variegation consists of a wide margin of clear white with sometimes a pinkish tinge on the extreme edge. The pure white variegation is very constant, and contrasts in a marked manner with the deep red bark of the young shoots. The above are two pretty variegated shrubs.—*T.*

Propagating Aucuba japonica.—Aucubas are in general procured from a nursery when any are required; still, raising them by means of cuttings is so simple, that a few remarks thereon may not be out of place. Aucubas will grow in almost any position and thrive much better under trees than many plants. Strong retentive clayey soil suits them admirably; in this the leaves are larger and the markings more clearly defined than when grown in light sandy soil. They are the easiest plants to move which we have, and owing to the quantity of fibry roots which they make they lift with plenty of soil around the roots. A good way of increasing the stock of this plant is as follows: At this season take off small pieces of shoots from 4 inches to 6 inches long with a small heel attached to them; insert them firmly in 6-inch pots in sandy soil, placing about nine cuttings in each pot; give a good watering and plunge the pots in ashes in a cold frame, where they may remain until February; by that time each cutting will be nicely callused. During winter they will not require much air—just a little at times to dry up superfluous moisture. At the time just named (February) they should be plunged in a gentle bottom-heat, either in a hotbed or propagating house, where they will soon start into growth, and by the month of April or May they will have made good shoots. They should then be gradually har-

dened off, when they may be planted in lines on a border. A west one suits them well. They will grow into good sized plants the same year. In the following spring they may be planted in any vacant places in front of shrubberies, or they may be again transplanted to wider distances apart on the same border, this time using some well rotted manure, which will assist their growth.—*E. M. S.*

INDOOR GARDEN.

POTTING LILIES.

I CANNOT do any of your readers, who have hitherto not grown some of the hardy Lilies, a greater service than to commend a trial of their culture, either outdoors, in beds, or indoors in pots for decorative purposes. Some of the finest, strongest, and most floriferous Japanese and American Lilies I have ever noticed were grown in Azalea (hardy) and Rhododendron beds, and undisturbed for years. At present I will confine my observations to potting (as this is a good time for the purpose if not already done) for indoor blooming, and without any pretence to have anything new to say. In several lists upwards of one hundred varieties are given, and these are generally classified into five groups, according to the shape or position of the flower. For potting purposes, a division into home-grown and imported will be the most suitable. Those I have in my mind are chiefly *Lilium auratum*, *L. speciosum* (*lancifolium*), *L. longiflorum*, *L. candidum*, and *L. pardalinum*—I need not include the *tigrinum* section, as I prefer growing them outdoors—and their varieties. Taking first home-grown, as soon as the flowering is over, and when the foliage begins to assume the sere and yellow leaf, shake them out. Most of the fleshy roots will still seem healthy; remove those that are decayed, or show incipient signs thereof. I am now about potting several dozen, or rather, I should say, repotting, for they are all grown at home, the Japanese imported generally not arriving until the end of November or thereabouts, and I have come to the conclusion that Lilies are perennial in their root growth. For instance, *L. speciosum* or *L. auratum* that had flowered in August had commenced to make new roots in September, which I consider the best indication of the necessity of at once repotting. Growth immediately recommences, and has proceeded a long distance on its way before imported bulbs have even arrived; and further, you put your home-grown with every root intact, except those decayed, including those in the form of a mop that grow from the base of the stem. I never remove the stem until it comes away decomposed a month or two after repotting, but if it is withered, I cut down to near the pot for appearance and convenience. As a rule, those repotted in September and October flower first the following July or August, but in the time of blooming they are very capricious. Perhaps I should make an exception of *L. Harrisii*, a variety of *L. longiflorum*, as to potting. This I do not interfere with, except to divide and then repot. It seems to never cease growth and to multiply rapidly.

L. CANDIDUM and its varieties require also a special reference on the point of repotting. As a general rule, indoor or out, the less this Lily is disturbed the better. I got *L. c. maculatum* from London last year, and though most carefully packed and managed, it did not flower, nor will not until next year. It takes two or three years to re-establish. I would make this note in reference to *L. pardalinum*, and in a less degree it applies to *L. auratum* and *L. speciosum*. Large bulbs and large pots will, as a general rule, require head room of 6 feet and often 7 feet high. If, then, you have an option, and you do not desire them so tall, take small sound bulbs and smaller pots. An 8-inch pot will finely flower a medium-sized bulb from 4 inches to 6 inches in circumference, and that might come in more usefully than monsters 15 inches and 16 inches round. Where there is ample space it is, however, very tempting to grow such for indoor conservatory effect; otherwise they suit admirably in the pleasure ground

planted out. One word as to soil. *L. auratum* is said to prefer a mixture of peat with the loam; I gave it in the proportion of one-third, but saw no advantage over loam and a mixture of old rotten hotbed manure with some sand. Sand I use more sparingly than perhaps with most other flowers, though some is necessary to give firmness to the woody stems.

Turning now to imported Lilies, and confining my view to Japan, though there are few places from China to Peru that have not been drawn on, California especially. These you cannot have until December, and then they arrive practically without roots. I have found it a great mistake to pot up at once or to water heavily. With bad treatment they are extremely liable to a mildew or fungoid rot. The best method of treatment seems to be to plunge them in Cocoa-nut fibre until root action is commencing, and then pot. They should be examined every few days, and if anything of the kind appears at the base of the scales, cut clean away, for if allowed to progress the bulb will soon get infected. I dusted such cuts with powdered charcoal. However, the vast majority arrive in splendid condition, and may be expected, with good treatment, to yield larger and finer flowers than we can possibly secure from those grown in our climate. However, the great attraction imported Lilies have for me and others is the variety. Take *L. auratum*; every one of a dozen may differ more or less, as has happened with me this year. I have before me as I write one with four gorgeous blooms, potted in January, pure white, with faint streaks of yellow on each petal; while among the *L. speciosum* one came pure white—Kretzer's Lily, described in *THE GARDEN* (p. 246).
W. J. MURPHY.

Clonmel.

VALLOTA PURPUREA.

ONE of two things has happened to "A. G.'s" plant; it has either suffered from want of water when growing, or it has had too much when at rest. This plant is by no means troublesome to grow if these two extremes are guarded against. Turn the plant out of the pot, and if the roots look black they are rotten, and have been over-watered. In a state of health *Vallota* roots are very white, and the pot should be matted with them. When a plant has gone wrong, the old soil should be quite shaken from it, just as the first leaf is issuing from the bulb in spring. Choose a pot only sufficiently large to contain the roots, give good drainage, and pot firmly. *Vallotas* will grow well in good fibrous loam, also in lumpy peat, but I prefer about equal parts of each, using white sand pretty liberally. By watering carefully, roots are quickly made, so that by the end of the summer the pots are full of new roots, and in autumn the bulbs will throw up stout flower-spikes from the midst of abundant, healthy, rich green foliage. One great mistake is to be frequently shifting this plant. Probably no plant requires fresh soil so seldom, in proof of which I may state that I have had five good bulbs in a 4½-inch pot for five years without shifting or top-dressing, and every year each one throws up a strong flower-stem 15 inches high, bearing some half dozen perfect blooms, making in all nearly thirty large vivid scarlet flowers.

Some three or four years ago I gave a friend a single bulb in a 6-inch pot, and this plant is now the finest I ever saw in small pots. It has formed several new bulbs, and bears this year three fine trusses of bloom, but what is remarkable is the wonderfully vigorous leaf development, the length and breadth of the foliage being far beyond anything I ever saw. When November arrives, or perhaps a little later on, this plant is set down on the damp ground floor of a little greenhouse, where it remains entirely without water until spring. It gets plenty of light there, and the moisture from the soil probably keeps the roots in an equable state of moisture, so that they do not suffer either one way or the other. In summer the pot is set in a saucer, which is filled up now and then. The numerous active roots thus supplied with a large amount of water

are naturally the cause of the vigorous leaf development. *Vallotas* generally bloom during October, and after the flowers fade they should get a little water until about the middle of November, after which time they will require very little indeed. If placed on a dry stage in an airy house they will need a slight watering about twice between December and March, or the leaves will lose so much sap as to cause them to turn yellow, and here I may as well observe that want of light will have the same effect. The *Vallota* is an evergreen, a fact which must never be lost sight of. Drip or an overdose of water will, however, soon make a sad wreck of it.

Last spring I saw that mine were not growing well, and I found the roots were mostly rotten, caused, I believe, by their standing where the wet blew in on them through a ventilator. I shook them out, and although some of the bulbs had lost nearly all their roots, they are now completely restored, the pots being crammed so full of big white fibres as in some instances to raise the soil above the level of the pots. Indeed, this is sure to happen if they are kept any time without shifting, and for this cause alone they need pans during growing time. When they first begin to grow they need a light watering about once a week only, but by July they will be growing freely, and must get enough to keep the soil constantly moist. Seeing how long the *Scarborough Lily* has been in this country, it is strange that in a general way it should be so indifferently grown. Perhaps it is too old fashioned for many, but can anything be more graceful or effective.

J. C. P.

Belladonna Lilies planted out.—We have these planted out in the bed of a conservatory and others in a south border in the open air, and in both cases they do much better than when confined to pots. Under glass our first planted out bulbs began to bloom about the middle of August, and they are still throwing up and opening many good flowers. We could never grow them in pots to give us such a long succession of fine flowers from one set of bulbs, and in all cases where convenience exists I would recommend the plan of planting them out. They grow freely in any rich, open mixture, and require much less attention than when kept in pots.—CAMBRIAN.

Vitis humulifolia.—Where this does not succeed out of doors some of your readers may like to know that it can be fruited easily in a 12-inch pot. A specimen of it so grown and allowed a rafter in a small ordinary Peach house here has fruited fairly well for the last two seasons, but I notice that the berries are brighter coloured this year than usual, a circumstance doubtless attributable to the fine season which we have had. This plant receives the same treatment as the Peach trees, that is frequent syringing and plenty of air. I believe, however, that abundance of direct sunlight is indispensable to success.—J. M.,
Charmouth, Dorset.

SHORT NOTES.—INDOOR.

Soil for Palms.—What is the proper soil for Palms, and what the proper time for repotting them?—J. L.

A strong loam suits the majority of Palms; a little peat to be added for the more delicate smaller kinds. Any time of year will do for repotting, provided care be taken not to break or injure the roots. Of course, with these, as with almost all plants, spring is the season most favourable in a general way for repotting.—ED.

Triteleas.—I last year tried these in pots and was much pleased with the result. I put them six in a pot, plunged them in ashes with other bulbs in October, and they flowered freely along with *Cyclamens* and *Dog's-tooth Violets*, just succeeding *Crocuses* and *Scillas*. They cost me 9d. a dozen.—A.

Madame Desgrange Chrysanthemum.—I quite agree with all that is said in reference to *Madame Desgrange* being an early-flowering *Chrysanthemum*. We have had it in flower here during the last month, and it is not only early, but the individual flowers are good, and there are plenty of them. We find it invaluable for early work, and shall grow it largely another year. It fills up a gap at this season before the later *Chrysanthemums* come in, and when few forced things are forward enough to be useful.—A. H., *Thoresby.*

5261.—Freesias from seed.—About two years ago, like "S.," I was in possession of *Freesia* seed from flowers which bloomed with me out of doors in the course of the summer. I kept it in my room till the beginning of February and then sowed it in 5-inch pots filled with a mixture of peat and leaf soil. The pots were placed in a house in which the temperature ranged from 60° to 70°, and the soil was kept moist like that for other seeds. In about a fortnight almost all germinated, and grew very well afterwards. As I had sown the seeds rather too thickly in the pots, I thinned the seedlings out and pricked them into smaller pots; but to my vexation the pricked out ones did not move for several weeks, and remained a good deal weaker than those which I left in the seed pots, which flowered the same year. These seedlings were put in a frame towards the end of April and kept there all the summer, plenty of air being always allowed to prevent them from getting lanky. I prefer sowing *Freesia* seed thinly in small pots, and not touching the young plants except they require a shift.—E. HINDERLICH, *New Palace, Wildpark, Germany.*

—We sow our seeds of *Freesias* as soon as gathered, or at about the same time as the bulbs are shaken out of the old soil and repotted. This is done in September. For the bulbs we use sandy loam with a little leaf-mould, potting them in 5-inch pots, and a few in pans about 9 inches across. By sorting the bulbs is meant separating the large from the smaller ones, so that when potted, bulbs of equal strength may be put together, and thus plants of uniform size and flowering strength be in the same pot or pan. If the soil is moist at the time when the bulbs are potted, no water will be required by them until their leaves appear above ground, when water may be given and continued until the bulbs go to rest again. For position, a cool, ash-bottomed frame is selected, and in this the pots of *Freesia* bulbs are placed for the winter. The principal cause of failure with these, and indeed with a large proportion of the small bulbous plants from the Cape, is a temperature too high during the winter. This induces them to start too early, to make weak, spindly growth—in fact, to exhaust themselves, so that when the flowering time comes they are incapable of doing more than push forth a poor apology for a flower-spike, and flowers of no substance at all. The temperature should be kept low and regular; frost should be excluded, and more than this is not necessary. Let the temperature rise with sunshine, and avoid cold, cutting winds, which are too often admitted to plants in frames on sunny, but cold, days during winter by inexperienced growers. I call particular attention to this point, because three years ago when I first had a number of *Freesias* to cultivate, [inattention on the part of the man whose duty it was to air the frames in which the *Freesias* were placed resulted in their being literally blasted by a cold morning wind, which blew while the sun shone rather brightly, and which was allowed to blow over the tender leaves of the young *Freesias*. When the flower-spikes begin to appear, a little extra heat may be given should the spring be at all cold. So much for the management of the bulbs of *Freesias*. With seeds, the treatment under which we have succeeded is as follows: Sow thinly in pots filled with a compost similar to that advised for bulbs. Just cover the seeds, then water them and place them in a warm, sunny frame, keeping them close till germination takes place; then let the treatment be as for newly started bulbs, or, in other words, that adopted for the management of seedling *Primulas*, added to all the sunshine possible. Thin out when the seedlings are large enough to be safely handled, about eight plants in a 5-inch pot being quite thick enough. There will be no flower the first year, but the young bulbs formed by seedlings treated as above will, when started again in the succeeding autumn, flower satisfactorily. Dr. Foster says he sowed freshly gathered seeds of *Freesias* in September, and they failed to germinate till the following spring, while seeds sown in May germinated at once and

flowered in the following spring. The failure of the first sowing may possibly have been owing to seed drying; at all events our seeds germinated soon after they were sown, which was in September.—B.

Scarborough Lilies.—Allow me to thank "Veronica" for the kind offer of a bulb of the typical form of *Vallota*, but since reading his last note on this subject I have had no difficulty in deciding that I was in error in thinking that mine are *eximia*. When I last wrote my plants were not in bloom, and I now perceive that they lack the distinguishing mark of that variety. If "Veronica" can help me to a bulb of *eximia* or major I should be truly thankful, as I have repeatedly tried to get them; and although I have a small bulb brought me by a friend who thinks it must be what I want, I fear it will turn out to be nothing more than what I have. "Veronica" asks if I know of any instance of successfully hybridising the *Vallota*. I cannot say I do, but I have a hazy notion of having read or heard that a hybrid *Amarylloid* exists of uncertain origin, and that the Scarborough Lily is credited with being one of its parents. If any of your readers know of such a plant, they would oblige by furnishing details concerning it. "Veronica" does not say what he tried to cross the *Vallota* with. My impression is, that the common *Amaryllois* would furnish the best chance of success, but the difficulty is to get the *Vallota* in bloom at the same time. It does, however, sometimes happen that a bulb misses blooming in autumn and flowers in spring. This occurred once with me, but I had no *Amaryllois* pollen and did not know where to get any, or I would have tried the experiment. I have often regretted not being able to do so.—J. CORNHILL, *Byfleet*.

AUTUMN DAYS.

THE year, whose progress through the long delightful summer and early autumn has been one of royal splendour, now arrayed in robes of russet and gold, is passing away to its grave amid the snows of December. But the path of its decline is strewn with flowers. True, the mornings are often dull and misty, but they frequently usher in warm and cloudless days; and though the evenings are chilly, the glorious colours in the western sky form a bright background to the trees in their autumnal dress, and throw out in fine relief the grey towers and spires of our churches and the warm-looking brick houses and buildings of towns and villages. I never saw our midland scenery so lovely as in this "chill October." The Oaks and Elms which, at the beginning of the month, were still green as in the middle of summer, have now assumed their richest tints. Chestnuts are almost leafless, but the foliage of the Maples, Sycamores, Beeches, and Planes is turning to autumn gold. The Willows are pale yellow, while the Poplars in many districts are still unchanged in colour, though the soft, balmy winds are causing their leaves to fall in showers. The hedgerows are very beautiful, exhibiting every shade of tint peculiar to the season, and covered with masses of scarlet and crimson berries, while the Brambles, though the Blackberries are all gathered, still garland the hedges, flinging sprays and trailing branches of their richly coloured foliage over Reeds and Bracken, and contrasting finely with the many hued Grasses on heath and moor. To see hedgerows in perfection, one should go into a country less highly cultivated than our part of England. When I was in South Wales in the early part of September the hedgerows were in their full beauty; never being clipped, but left to their own wild will, they exhibit in spring, summer, and autumn a succession of climbing plants. In September the Hips and Haws were already deeply coloured; but mixed with these were luxuriant growths of white Clematis and fragrant Honeysuckle, "the well-attired Woodbine" of Milton, while many varieties of Ivies clothed the ruined castles and grey old church towers, the glory of the Principality. I have said nothing about garden flowers. Was there ever an English summer more beautiful than the one which has just left us? It reminded

me of bright days spent under Italian skies, but it possessed a charm peculiarly its own. We value things in proportion to their rarity, and we are so unused to a succession of blue, unclouded weather, that we hardly know how to praise it enough. The summer suited particularly well the flowers in herbaceous borders, though they required much time and care in watering, as did the Geraniums, Asters, Petunias, and Heliotropes, which are commonly planted in beds to themselves. Our midland garden has been gay for many months, to say nothing of spring flowers), though the flowering shrubs—Lilacs, Laburnums, and Syringas—suffered much from want of rain. The summer brought us great store of Roses, Clematises, Lilies of various sorts, Hydrangeas, Foxgloves, Sweet Williams, Canterbury Bells, Pinks, Carnations, and Sweet Peas, while Asters, Zinnias, Salpiglossis, and many varieties of Dianthus were grand; even now many of these are still with us. We have beds of Heliotrope, Petunias, and Mignonette, which might rival those of July. Our Sunflowers, excepting the perennial ones, are over, but the rows of Sweet Peas still provide nosegays for every day. Our single Dahlias are in full flower; that pretty little double one, the Fire King, has done particularly well, while our red and white Cactus Dahlias have not been successful. The White Queen, a great favourite in most gardens, seems difficult and uncertain to propagate from seed. A gardener I know sowed some seeds of this variety, and when the plants flowered, only two or three out of more than a dozen were white; there were yellows, light and dark reds, and other shades. We planted our Dahlias in a bed, and gave them two or three copious waterings with a thorough top-dressing early in the season, and they never looked back. That peerless gem, the white Japanese Anemone, is full of blossoms; it mixes well in a vase with the dark Heliotrope, needing hardly any foliage but sprays of Mignonette. This Anemone suffers (as its admirers well know) more almost than any other herbaceous plant from dryness. Copious waterings and top-dressing are absolutely necessary during the burning days of summer if you wish for autumn flowers. Our Honeysuckles are in full bloom and fragrance, while beds of Violets (both in cold frames and in the open ground) whose flowers, just beginning to peer out from their glossy leaves, would fain cheat us with the promise of another spring. The birds! mute, alas. All but the robin, whose plaintive songs alone break the silence of fields and gardens. No more

The merr, lark her matins sings aloft
The thrush replies, the mavis ascant plays.

The robin, like a "brother born for adversity," alone remains to cheer us when all the woodland music has ceased.

In the sad time of the waning year,
In the long month of November drear,
The robin's note rings soft and clear.

I wonder if many persons noticed the departure of the swallows this year; it would be interesting to compare dates. Having been in London for a week or two lately, I returned to my home feeling sure that I had missed the bustle of their assembling and the preparations for their flight, a sight I always look forward to. However, spending the afternoon of the 11th at our county town, I observed as it began to grow dusk a great concourse of swallows evidently on the eve of their departure (they might have been going off by train, as this assemblage took place near the two railway stations). Many of them were perching on the telegraph wires awaiting directions; others rushing madly about, darting in and out among the little parties of feathered travellers, doubtless arranging the order of their going. I felt sure that on the morrow not one of the emigrants would be left behind. One of the great blessings of a country life is being able to notice the seasons, marking many interesting circumstances connected with the animal and the plant world. Nothing is lost to an observant eye. A feeling of sadness steals over the spirit as we look back on the departed summer and watch the decline of the year. Let us ponder the lessons which Nature

gives us, and treasure up her unspoken sermons as they fall on the ear of the mind. She never preaches more powerfully than when we are

Looking on the happy autumn fields,
And thinking of the days that are no more.
M. N.

GARDEN FLORA.

PLATE 463.

HEUCHERA SANGUINEA.*

WITHIN the last few years, and since North American plants have been grown in our gardens to a much greater extent than formerly, the general appearance of our hardy collections has been proportionately enhanced thereby. To California and Mexico too we are indebted for many handsome summer-flowering plants which, though chiefly annuals, are more generally grown than could have been expected; perennials, with a few exceptions, succumb to our trying winters, but, like the Dahlia, they can be taken up on the first approach of frost, and safely stored away until the ensuing spring. The *Heucheras*, however, are nearly all natives of a climate analogous to our own, and therefore they are better able to withstand our winters, provided a proper soil and situation be given them. The more common kinds, such as *H. americana* and *H. Richardsoni*, may be used with striking effect for massing in the wild garden, in which the former at least will be quite at home, and for edging evergreen shrubberies few plants will be found more suitable. For the more rustic part of rockeries, too, they are also very useful, especially when planted in combination with large-leaved Saxifrages. A good rich peaty soil suits the generality of them best, though they also grow well and flower freely in the ordinary mixed border, a little shade and plenty of moisture being essential to their well-being during the growing season. As all of them deserve a place in gardens, the following is an enumeration of the species as they now stand:—

H. AMERICANA.—The common American Alum root is the most common, having been introduced to English gardens as early as 1704, and it still quietly holds its own as a fine-foliaged,



Heuchera americana.

if not as a flowering plant. It is very useful for massing under trees or in deep, shady places, to which indeed it may be said to be partial. The root leaves, which are borne on long stalks, are seven-lobed, and are doubly and very sharply crenate, and of a beautiful green colour, which gets dense toward the winter season; the others are from four to five-lobed, oval shaped, and cor-

* Drawn in the Hale Farm Nursery, Tottenham, June 5.



date at the base. The flower-stems are generally about a foot high, dividing towards the top into loose panicles, on which are borne the dull purplish flowers, conspicuous on account of their protruding styles. They are in perfection during June and July.

H. MICRANTHA has much the same habit as the above. It is pretty generally distributed under the name of *rubescens*, from which, however, it is totally different. To show to advantage, *H.*



Heuchera micrantha.

micrantha should find a conspicuous place on the rockery, as there its long graceful panicles projecting beyond the stones are not unlike those of the pyramidal Saxifrage. It grows from 1 foot to 2 feet in height, and the flowers, which are borne in loose panicles and of a bright purplish colour, though small, are numerous and attractive; the leaves are round or slightly oval with a cordate base, and from 2 inches to 4 inches in diameter; lobes blunt toothed, and having hairy veins on the under surface. The flowers are produced in the latter end of June and July. It is a native of woods on the coast ranges of Sierra Nevada, and is easily increased by seed or offsets, which strike readily.

H. RICHARDSONI.—As a fine foliage plant this claims a first place in the genus, and on that account it has lately become very popular under the name of *Satin-leaf*. It is a handsome plant for any open place or rockery, where it forms fine graceful masses that are equally as ornamental in winter as in summer. It grows from a foot to 18 inches high, and the flowers, which are borne in loose panicles and of a pale purplish or yellowish colour, are large for those of a *Heuchera*; the leaves are cordate, and have a deep recess; the lobes are rather blunt, and crenated, and hairy on both sides. It is a native of dry banks in N. America, and flowers in June and July.

H. MENZIESI.—This is a distinct and a desirable plant, and a first-rate companion for *H. americana*, being easily distinguished from the others, inasmuch as it has leafy stems. It grows about 2 feet high; leaves large, cordate, very acutely lobed, and deeply serrated; stem much branched; and the flowers, which are without petals, are more curious than ornamental. From the funnel-shaped calyx the stamens protrude about half-an-inch. It comes from the north-west coast of America, and flowers in July. A variety of it nearly quite devoid of hairs is also in cultivation.

H. PUBESCENS.—This is a pretty species, being covered all over with a soft, powdery down; the leaves, which are sharply lobed, have roundish teeth; the flowers, which are borne on dense

clustered panicles, are large and of a pale red colour, intermixed with a yellowish tint. It grows about 1 foot in height, and flowers from May to July.

H. SANGUINEA, represented in the annexed plate, is perhaps the most beautiful and delicate of all the *Heucheras*. It grows with surprising robustness at Tottenham in the ordinary border, and seemingly without any special care, a fact which bodes well for its future prosperity. A plant so handsome that requires no particular treatment surely deserves extensive cultivation. When seen in masses it has a charming effect. It has a neat, bushy habit, dense near the ground, from which rise numerous loose and graceful flower-spikes about a foot in height, and covered with blossoms. The leaves in outline are nearly circular, deeply cordate, five to seven-lobed, and these again are sharply crenated; they are of a light green colour and slightly hairy. The anthers are darker than the flowers, a circumstance which considerably enhances their beauty. It is a native of the Porphy Mountains of Llanos, and flowers in July and August. It will, no doubt, be easily increased by division.

The only others worth mentioning are *H. glabra* and *longipetala*, the latter with pure white flowers, but rare in commerce. D. K.

FRUIT GARDEN.

FOXY GRAPES.

WHILE thanking Mr. Douglas and "A Third Scot" for their warning voice against the evils attendant upon the over-cropping of Vines, mine in particular, I at the same time may be allowed to point out some misunderstanding on the part of both in reference to my letter on this subject. Mr. Douglas, while convinced that over-cropping is at the root of the whole matter, falls into error when he applies this to the late house as the cause of the Grapes therein not colouring. In colour they were everything that could be wished, and were only mentioned in conjunction with the early crop for the purpose of comparison. "A Third Scot," who jumps at conclusions as do fish at flies, and with like results, makes mistakes and hooks himself. At the outset he takes it for granted that the Vines here, to have produced Grapes of a foxy colour, are in a diseased and debilitated condition, the direct consequences of spider and thrips and overcropping. As he tells us, well coloured Grapes are only to be found in conjunction with good foliage and general good health.

Now, as I have already stated, the Vines in question are in perfect health, nor are they in the least affected by either spider or thrips, or any other insect pest whatever. Regarding both wood and foliage I have already written, but I may again state that the former is very strong and well ripened, and that the latter is leathery in texture and ample. "A Third Scot" has made the most he could of the rate of cropping given by me, viz., from sixteen to twenty-six bunches on a 12-foot rod, in weight from half a pound to 4½ pounds per bunch; but before writing down 52 pounds, and following it up with the term "preposterous," why not have first ascertained the number at half a pound? I also wish to state that the Grapes in question were not ripe until the end of June instead of May, as stated by "A Third Scot." He seems to be joking when he recommends anyone who may be disposed to test the difference in flavour between red and black Grapes to take both from the same bunch, &c. Now, according to his own showing, "really well-coloured Grapes, or Grapes that are going to colour well, seldom or never shank, and shanked Grapes are always red," &c. A red berry on a black bunch must therefore be a shanked one. From this argument he would have us believe that in pronouncing in

favour of the red berries, the editor's taste was at fault. That the editor's taste in this matter, however, and which I hope is still unimpaired, was perfectly correct, is substantially corroborated by the verdict of over thirty persons who had tasted the fruit.

I cannot yet believe that these Vines have been over-cropped, because, in the course of five years, an advance from a state of decrepitude and weakness to one of health and strength could never have taken place. That the rate of cropping given by me is not so much beyond what "A Third Scot" considers the "best growers" expect will be best seen when looked at as follows, viz., given a 12-foot rod and laterals at 18 inches apart—wider than the majority allow. You get at this distance eight on each side, which is sixteen bunches to a rod. If each bunch were to turn the scales at 3 lbs. or a trifle over, one at once gets the "preposterous" weight of 48 lbs. or 52 lbs. per rod, and, given the best of care, what is there to prevent a Vine doing this? The "best growers" may have a motive in not going beyond the 1 lb. or 2 lbs. to the foot run standard; but that that standard is not the bearing limit of healthy Vines, none, perhaps, know better than those who set it up. I am still anxious to hear the opinions of your readers as to the unique colouring in question; but as none of your correspondents have had the pleasure of testing the flavour, that question had better be kept out of sight for the present.

ANOTHER SCOT.

HEADING DOWN FRUIT TREES.

IF there is one part of fruit culture in which we have made more progress than another it is in the matter of pruning, and more especially is this the case with regard to young freshly-planted trees, which in my earliest recollections of fruit tree cultivation were invariably headed down close directly they were planted with a view, it was averred, to strengthen them. A more certain mode of weakening the tree, however, could hardly be devised. With roots mutilated in the course of removal and vitality at a low ebb, the trees were in the worst possible condition to operate on with the knife, and there can be little doubt that much of the gumming and cankering that occurred was caused by too much pruning. I have frequently thought it a strange beginning with young Vines to cut them down to the ground, not only the first year's growth, but also that of the second year, in cases where the owner was resolved to spare no pains to get up some specially good canes, and was firmly impressed with the prevailing idea that cutting down would vastly increase their vigour, while wall trees, standard trees bushes, and in fact every kind of tree that could be so operated on had nearly all the young wood cut down to a few eyes at the base. Happily, a more rational system has by degrees worked its way into almost general practice, and now we find the plan of planting young trees and leaving the shoots entire just as they arrive from the nursery very generally adopted, and with excellent results, not only as regards the health and future well-being of the tree, but especially as respects early fruitfulness. One of the most general complaints and drawbacks to fruit culture used to be the length of time during which one had to wait for any return from young trees. I could adduce hundreds of instances to illustrate the folly of hard cutting back; but as the practice is nearly obsolete, I will rather turn to the brighter side of the picture. I can safely say that in the case of stone fruits especially the knife is too frequently the cause of half the evils to which they are liable.

During the present season I have seen walls covered with Peaches, Nectarines, Plums, and Cherries that have not had the knife used on them at all; the only pruning they have ever had was that done with the finger and thumb, viz, disbud-ding and pinching. Planted with the shoots at full length, the trees formed fruit buds the first year, and in the second bore several fruits each; by the fourth year they covered the wall entirely from base to summit, and produced crops of fruit

quite equal to what they used to do in ten or twelve years under the hard-pruning system. When allowed to extend freely the strongest shoots soon lose their grossness and become fruitful. One of the greatest evils attending the hard-pruning system was the fact that where one strong shoot was cut several others were produced, thus augmenting the evil. Cutting off branches of any size is in all cases a dangerous proceeding, for the simple reason that the cuts on a tree are similar to wounds on the body, and have to be healed over by new bark before the tree can be said to have recovered from the shock to its system. The evil results, moreover, are not confined to the tops of trees; the roots, too, soon get into as bad a condition as the tops, and young trees are soon converted into prematurely old ones.

Some few years ago I took charge of a quantity of trees of all kinds that had been severely pruned for years. Standards with clean straight stems had had their tops cut into the form of an umbrella, and they were not larger than an ordinary one after twenty years' growth. As might be expected, too, the fruit produced by such trees was poor, from the fact that, the young wood being constantly cut away, only hard, snag-like spurs were left to produce the crop. In order to remedy this state of affairs I allowed the young growths to extend without any stopping at all for a year; at the winter pruning they were merely thinned out where very thick; all the rest were left at full length. This course was pursued for three years, and the trees are now perfectly recovered, and have without any training formed most beautiful pyramidal-shaped heads covered with flower-buds.

I can strongly recommend anyone having old trees rendered decrepit by over-pruning to try the effect of letting the growth extend at will. More shoots mean more roots, and this will soon produce a more fruitful tree than any kind of training can do.

JAMES GROOM.

Gosport.

Shrivelled Grapes.—I send you some berries of Lady Downes Grape which every year about this time shrivel, as you see them, and then become mouldy; the bunches were very fine about three weeks ago, but now are very poor. Black Alicante, the next cane, bears a very fine crop. Can you tell me the cause and cure?—H. W.

* * The shrivelling of the berries of your Lady Downes Grape in this particular instance is what is technically termed scalding, and this variety is much more liable to it at certain stages of growth than any other Grape. Usually the evil is greatest when colouring first commences, but I have known it to occur right up to the time when the Grapes have been fully ripe. The remedy is abundance of air; in fact, the ventilators of vineries in which Lady Downes Grape is grown should never be quite closed, and as a matter of course there should always be a little warmth in the pipes to ensure the air of the house being lighter than that outside. It is the condensation of moisture on the berries combined with sudden changes of temperature, high or low, that must be credited with the mischief. Once the Grapes are fully ripe, the evil ceases; hence it is desirable to hasten this process by firing rather hard and airing freely, without either of which this Grape is never more than third-rate, but given these no late Grape excels it for quality and long keeping properties.—W. H.

SHORT NOTES.—FRUIT.

5522. **Select Peaches.**—For the early crop I should plant Hale's Early, Stirling Castle, and Early Grosse Mignonne; and for three late sorts I should select Royal Hative, Bellegarde, and Barrington.—J. C. C.

Tomatoes & wasps.—“Belfast” (p. 339) says, “wasps will not go near a house in which Tomatoes are growing,” but either his wasps or his Tomatoes must be different from ours. I have repeatedly seen wasps make their way through Tomato screens to get to our Grapes, and although we grow many Tomato plants between Plum and Peach trees on open walls, we annually lose many good fruits through wasps eating them. This remedy was brought forward some few years ago, but in practice it proves to be valueless.—CAMBRIAN.

FLOWER GARDEN.

DAFFODIL NOTES.

Now that we have got our bulbs planted and have leisure to look around, it will be interesting to have a little talk about the catalogues in continuation of Mr. Engleheart's notes in your last (p. 342). There will be plenty of work for many of us in the coming spring, to re-name all our Narcissus as they come into bloom, if we are to follow out the new nomenclature. For my own part, I prefer many of the old names to the new, as the former are associated with pleasant memories, like old familiar friends. I shall, therefore, for the present use double labels. It will take us all a long time to unlearn the names we have been educated with, and to get used to the long string of non-descriptive fancy names which the Daffodil Conference has thrust upon us.

THE LEEDSI DAFFODILS.—What strikes me most forcibly in looking carefully through Mr. Barr's “Daffodil Conference Supplementary Catalogue” is the extraordinary number of varieties marked with the letter L, which indicates that they were raised by the late Thomas Leeds, of Longford Bridge, near Manchester. They are as follows: In the Ajax or trumpet group, thirty-two varieties; in the bicolors, twelve varieties; lorifolius group, two varieties; in the moschatus, three varieties; in the incomparabilis group the extraordinary number of sixty-five varieties; besides the following in the minor groups of this series, Barri, seven; Leedsi, twenty-one; Humei, four; and Nelsoni, six. In all a total of 152 varieties of the Narcissus, all presumably quite distinct, as they have passed the severe ordeal of scrutiny by those deputed to settle the identity and revise the names of each variety. Not only are these Leedsi Daffodils very numerous, but they are also of great merit. In the Ajax group we find John Nelson, which is one of the grandest trumpet Daffodils; Captain Nelson, Her Majesty, Hudibras, a well-named, quaint-looking Daffodil; Volutus, now J. G. Baker, my favourite of all the trumpets, and which was especially honoured as having been selected by our Kew chieftain to bear his name; and major superbus, which was figured in the *Gardener's Magazine* some thirty years ago. Then in the bicolors we have that most symmetrical in form of all the Daffodils, bicolor maximus, now called grandis, with its pure white perianth and exquisite tube, fitly stated by Mr. Barr to be perhaps the finest of all the bicolors; albidus, now called James Walker, also a most beautiful Daffodil; and there are amongst others Professor M. Foster, Dean Herbert, a very large and fine variety; William Robinson, a grand flower; and others of great value. Of the moschatus, or white Daffodils, we are indebted to Mr. Leeds for cernuus pulcher, the Marchioness of Lorne, and William Goldring; and when we come to the sixty-five incomparabilis varieties of Leeds's raising we find almost all our favourites amongst them—Frank Miles, Edward Hart, Leedsi, Princess Mary, Harpur Crewe, splendens, sulphureus, &c. The Barri and Humei series both emanated from the Leedsi raisings, and of course the beautiful Leedsi group are his; and, lastly, the curious Nelsoni, which has the peculiar tube of Macleayi. Mr. Barr does not give the origin of Nelsoni, but he makes it follow Macleayi, and I think he might safely attribute it to incomparabilis × Macleayi, as it bears the strongest evidence of this parentage. (He gives the parentage of Macleayi as Pseudo-Narcissus × Tazetta. It would be interesting to know how this has been arrived at, and if there is any positive information on the point.)

The thought must occur to everyone acquainted with Daffodil literature how little do we know of this greatest raiser of our favourite flower. Who will write his history? It is yet unwritten. Poor Mr. Leeds was an invalid for the last few years of his life, and had to be trundled about his garden in a bath chair. He did not live to see the full fruition of his labours. Finding that he could not attend to his numerous Narcissus seedlings, he sold the whole of his stock a short time before his death to the Rev. John Nelson and Mr. Barr. Since

Mr. Nelson's decease they have all come to Mr. Barr, and it is only now that we are beginning to realise the vast extent of the successful labours of Mr. Leeds. Mr. Tyerman probably knows more than any man of the gardening methods followed by Mr. Leeds, and of his doings at Longford Bridge. I hope he will contribute his recollections to your columns. It is a history worth recording, and if once commenced others would probably add their contributions, and the recital would certainly be of great interest.

N. INCOMPARABILIS GIGANTEUS SIR WATKIN.—Mr. Barr gives this a class to itself, as the largest of the Queltia section, and as raised by “P.”—Mr. Pickstone. Mr. Engleheart refers to it in his notes (p. 342), remarking that I suggested that it had the blood of biflorus in it, which he thinks extremely improbable. It is quite true that I made this surmise in my first paper on this Daffodil, but I do not hold the opinion as strongly as I did. I have come to the conclusion, after further investigation, that it is far older than Mr. Pickstone's finding of fifteen years ago, and it is far more plentiful now than anyone knew at that time. The very high prices at which the bulbs have been placed on the market have stimulated enquiries, and many thousands of bulbs are forthcoming which are believed to be the same Daffodil from other mountain districts in Wales. The coming spring will show us if this be so, when they are bloomed alongside of Mr. Pickstone's Daffodil, here and elsewhere. I am told that this Daffodil has been known in Wales for forty years as the Giant or Mountain Daffodil, and that the same is to be found in many gardens through North and South Wales in its larger cultivated form, and in its wild state, nearly as large, over a considerable area. But the evidence goes further back than this. In Hale's “Eden,” first edition, 1757, and also in Hill's “Eden,” published 1773, this large form of N. incomparabilis is figured, the diameter of the flower being 4 inches, and its height stated to be 2 feet. It is described at page 481 in both volumes as follows: “The Nonpareil Daffodil.—It was early distinguished by writers on plants, and obtained from its great size and fine colouring very honourable names—the Incomparable, the Nonpareil, and the Excellent Daffodil. The late authors have called it maximus, and omnium maximus, the greatest Daffodil, and C. Baubine, N. latifolius pallidus, calyce amplo, the broad-leaved pale Daffodil with a great cup.” To me it appears clear that this is the very Daffodil we have recently hailed as our grandest novelty, whereas it was a well known giant Daffodil nearly a century and a half ago. It seems to have been the original incomparabilis; whereas those varieties known to us under this name are only dwarfed descendants, quite unworthy of the title. In my last note on this Daffodil I expressed a fear lest it might deteriorate when brought away from its mountain and sea air, and this seems to confirm my opinion.

WM. BROCKBANK.

Brockhurst, Didsbury.

ALPINE AURICULAS.

Now that very fine varieties of alpine Auriculas can be bought at moderate prices, and as with ordinary care they are not difficult to cultivate, there is no reason why many persons with leisure and convenience should not grow a collection of them. What is necessary is a small lean-to or low span-roofed house on a north aspect or in a position where it can be shaded from the sun during a portion of mid-day and during the afternoon. Failing this, a cold frame with a movable wooden stage with shelves one above the other, which can be removed at will—even an ordinary garden frame without a stage can be made to grow these charming plants, provided the necessary attention be given them. It should face the south in winter and spring and the north in summer and early autumn. Then some pots, 3-inch and 5-inch, will be required, some good fibry yellow loam, leaf-mould, rough Bedfordshire sand, and well-decayed stable manure. In these things we have what are necessary to the well-being of the plants when properly grown. We may divide alpine Auriculas

into two sections, though it is hardly necessary to do so, viz., those that have shaded margins—that is, a margin composed of two colours, in which the darker one is shaded off to the lighter marginal zone—and margins that are wholly self-coloured. Then there are golden centres and others with white or creamy centres. The latter type is generally found in combination with violet and mauve shades, and they are always very pretty.

Now for a selection of pretty varieties. I begin with Colonel Scott, bright yellow ground or centre and very dark maroon margin, fine in pip and very showy; Duchess of Connaught, creamy centre, dark ground shaded with bright purplish rose, large pip, very fine and pleasing; Conspicua, a fine old variety, creamy ground with bright pale mauve shading, very pretty; Evening Star, golden centre, slight dark ground with a broad salmon-buff shading or margin, very fine; Fred Copeland, golden centre with dark crimson margin, fine and striking; George Lightbody, white centre, dark ground, shaded with pale violet, very attractive; John Ball, bright yellow centre, edged with rich dark crimson, very fine pip, and striking in every way; Mariner, bright pale golden centre, dark ground, with shading of purplish crimson, very fine; Mercury, golden centre, with rich shining maroon margin, very fine; Mrs. Ball, lemon centre, black ground shaded with purplish crimson, large and very fine; Mrs. Phipps, white centre, black ground with violet shading, fine; Mrs. Thompson, rich golden centre, maroon ground, with bright crimson shading; Philip Frost, creamy centre, dark ground, shaded with purplish rose, fine and striking; Phoenix, rich golden centre, crimson-maroon, edged with slight carmine shading, very fine; President, golden centre, maroon ground, with pale satiny purple shading; Queen Victoria, creamy centre, dark ground, shaded with violet, very pretty; Spangle, bright golden centre, maroon, with slight brilliant crimson shading; Sultan, bright golden centre, dark ground, with broad edging of crimson, very fine; Tenniel, cream centre, with bright bluish lilac edge, very chaste and pretty; Susie Matthews, white centre, shaded with bright pale mauve on a dark ground; and William Bragg, pale golden centre, with a broad, bright maroon edging, very fine.

Now is a good time of year to obtain a collection. If they do not come from the nursery in pots, they should be potted on arrival, using a free, sandy compost, placing the plants in small pots, and potting rather firmly, and then placing the pots in a frame or house, keeping them close for a few days to encourage them to draw root, as the florists term it, and the plants should not be over-watered at this season of the year, but the soil should be just moist enough to keep them growing comfortably. R. D.

EARLY-BLOOMING CHRYSANTHEMUMS.

THESE are often stated to be suitable for the backs of herbaceous borders, but I would give them a more prominent position, and recommend them as the best of all plants for the general embellishment of flower gardens. We have grown some of the best of them for several years, and our stock is annually increasing, and it will continue to do so, as we have no half tender bedding plants which can withstand intense heat, severe cold, or excessive wet so well as these Chrysanthemums can do. They grow luxuriantly and bloom profusely independent of all weathers. At one time yellow flowers in our flower garden were wholly represented by Calceolarias and Violas, and these did very well for a time, especially in the cool fore part of the season, but frequently during the hottest weather, when flowers should have been at their best, some of them would "go off," leaving ugly blanks, and by September or a little later not one of them was really in fine bloom, the majority having become exhausted, so far as the production of flowers was concerned. This was not satisfactory; indeed, such failures were a great source of annoyance, and the only remedy we have ever found is the use of early-flowering Chrysanthemums. These, if got up into fairly

good plants by the middle of April, and planted in their blooming quarters then, will begin to flower in June and July, and not cease or flag until well nigh Christmas. Some of our yellow ones have been in full bloom since July, and they are now as full of flowers and as fresh and attractive as ever. I know nothing to equal them in general usefulness, and they are not by any means out of place, even in the choicest of flower gardens. Their habit of growth is graceful enough, and their unhampered, natural-like style of flowering makes them much more attractive than any level mass of Geraniums, or other plants of similar growth. In my opinion, they will yet be largely used in the flower garden, and no doubt, as the demand for them increases, additional varieties will be produced. Apart from their wonderful tenacity in the way of growth and bloom, they may be classed amongst the hardiest of hardy plants, so far as artificial treatment is concerned, as when once planted they are always there. If the old growths are cut down about midwinter, or after that, the young shoots will spring up freely from the base and form a fresh display so long as this system is practised, or all the old plants may be lifted in spring, little growths taken from them with a few roots attached to them, and replanted in the same place or in fresh beds. This is the plan most suitable for people who have no glasshouses or frames, but where these can be used, the young plants may, when taken off, be put closely together in shallow boxes in a light, sandy mixture, and be kept in them until they have formed many roots and good tops. They, however, succeed admirably when treated as perfectly hardy plants, and on this account they deserve to be widely known amongst your many readers who have no artificial means of saving their plants during winter. Altogether, it would be quite impossible to over-rate the value of these summer-blooming Chrysanthemums. J. MUIR.

CHRYSANTHEMUMS AT FINSBURY PARK.

THE display now opened for public view in this park is a very attractive one, and will be at its best in a week or ten days' time. The plants are remarkably fresh and healthy, and are staged in a convenient and well-ventilated span-roofed house, situated near one of the main entrances. The following is a list of the best varieties now fully in bloom, and all interested in these flowers would do well to inspect them. To working people, the collection being on view on Sundays as well as on week days, it will be a boon. Amongst flowers fully open the following were conspicuous, viz.: Glück, golden; Mrs. Bunn, golden, incurved; Chang, terra-cotta, Japanese; Miss Hope, recurved; L'île des Plaisirs, sea anemone-like, orange, Japanese; Gloria Mundi, golden; Ensign, lilac-purple; La Nympe, pink, quilled, Anemone centre; Duke of Edinburgh, pink; Le Nègre, very dark red; Rosa Bonheur, magenta; Constance, darker than Le Nègre; Empress Eugénie, Golden Beverley, Plimpo, Sarnia, quilled, pink and white; Mr. Corbay, dark red; James Salter, like Elaine in form, but lilac-rose; Hereward, Hiver Fleur, yellow in centre, shading off to pink, very pale, Japanese; Rifleman, quilled, dingy red; Héloïse, small and good; Marguerite d'Anjou, quilled, Anemone centre, golden bronze; La Frisure, small, pinkish, distinct, frilled flower; Clytie, old gold and red; Criterion, bronzy gold; Lady Talford, quilled, dull pink or rose; George Glenn, golden; George Glenn, straw coloured; Striatum, quilled; Refulgence, maroon-red; Elaine, white; Dr. Sharp, crimson-purple; Mrs. Parnell, white, like Mrs. Rundle; Madame Godillot, quilled, red and yellow; Ethel, white; Triomphe du Nord, brick red, fine reflexed flower; Gloire de Toulouse, magenta; Chevalier Domage, very rich golden; Mdlle. Toulouse, pale magenta; Mrs. W. Shipman, quilled; Cœur Fidèle, Japanese, red; Cité des Fleurs, pale magenta; Cassandra, white, tinged with pink; Fair Maid of Guernsey, quilled, white; L'Incomparable, gold speckled; Lord Derby, Duchess of Manchester, white; Alfred Salter, Red Dragon, Felicity, very good, white. Some

varieties, such as Baron Prailly, Le Nègre, L'île des Plaisirs, and Hiver Fleur, are most distinct; so also is George Gordon among the newer kinds. The two collections in the Temple Gardens are now also worth a visit, some of the newer kinds being represented by good blooms there, although the plants are not so fresh and vigorous as are those grown out in the fresh air and elevated atmosphere of the park at Finsbury. We make no invidious comparisons; indeed, anyone seeing the flowers at the Temple Gardens will wonder that so much beauty and freshness can be secured at this dull season, and perhaps feel grateful that our gardens possess such a thing of beauty, as the Chrysanthemum undoubtedly is, under good culture. F. W. B.

FLORISTS' MODELS.

MY letter on Carnation and Picotee "models" (p. 230) is open to no such interpretation as that which "S. W." seeks to put upon it, viz., that it is an attempt to whitewash the modern at the expense of the older florists. I pointed out to "S. W." what as a critic of florists he ought to have known, that these "models" of Glenn which he fancied—Heaven forgive him!—were the florists' ideals had been from the first denounced by them. On being driven from this ground he seems to have thought he would be safe in taking his stand on Mr. Douglas' book. But here he fared no better, as it is perfectly well known to all who know anything of the matter that, however excellent otherwise, Mr. Douglas' book is, as regards the properties of florists' flowers, of no authority at all, but that, on the contrary, it contains manifold errors which have already been pointed out by florists.

These "models" of Glenn, worked up in nursery catalogues, and unluckily also in Mr. Douglas' book, being, as "S. W." confesses, "the only ones to which he has had access, have been a sad snare to him. They offered a temptation for what seemed a safe shot at the florists which proved irresistible.

"S. W." however, is not one of the feeble folk who, having been betrayed into a mistake, are content to acknowledge it, so he continues to quote the author of "Hardy Florists' Flowers" as an "authority," and wants to know where the models that are now in vogue are to be found, as if my letter at p. 230, or the far abler contribution of your correspondent "Nemo," p. 251, had never been written. "S. W." is *impayable*. M. R.

Centaurea babylonica.—This is a singular, if not a handsome, plant; a stately flower-spike rising out of a bed of shield-shaped silvery foliage towers to a height of 7 feet. The stem, too, is so much twisted, that this Centaurea might not inaptly be called the Cork-screw plant. From several points up the stem the Thistle-like heads of flowers appear as well as many more near and at the top. The orange-coloured mass of florets of which the flower-head is composed is not altogether unattractive. It is a plant that evidently likes a rather deep and rich soil, or else it requires a very favourable summer in which to properly develop itself.—J. C. C.

Autumn-flowering Saxifrage.—*S. cortusefolia*, a kind nearly allied to the old Strawberry Saxifrage, from which, however, it differs widely in being devoid of the runners so characteristic of *S. sarmentosa*, and also in the form of the leaves, will undoubtedly prove of great value in hardy plant gardens, coming as it does into flower at a season when most rockwork plants are going out. It is also nearly allied to Fortune's Saxifrage, the popularity of which can hardly fail to give a proper idea of its value. It has, however, smaller, though more numerous, flowers, and it is a plant which is much freer in habit than Fortune's variety. It is said to be a very variable plant in South China and Japan, where it is a native, and to run into the two kinds mentioned above, but the form at present in cultivation, and which was introduced some time ago, is distinct enough to warrant a separate name, and where

only the showiest of hardy plants are grown it is quite likely to supersede *S. Fortunei* altogether, as it is much freer habited, increases more rapidly, and adapts itself with ease to almost any position, with the exception of a very dry one. It grows about a foot in height, and the dark shiny green, cordate, or half uniform-toothed leaves are thickly covered with stout hairs, which give it quite a unique appearance. The flowers, which are borne in loose panicles, are very handsome and graceful, pure white, making a striking contrast with the numerous bright reddish brown anthers. It may be propagated easily from seed or by division of the roots.—K.

Crown Daisies.—These certainly give a large amount of pleasure for the labour they incur. Sown in the open ground in April they come into bloom by August, and are effective all through the autumn months, being especially attractive during September, when the flowers come large and develop their colours better than in very hot weather. Crown Daisies do very well on dry poor soils, but it is a mistake to starve them, as the flowers then come small and are not nearly so numerous produced as when they have good soil. Grown liberally, they form large bushes by autumn and have a fine appearance. Of these annual *Chrysanthemums*, *Burridgeanum* is far the best, the combination of colours in it being novel and telling.—J. C. B.

Narcissus princeps—Mr. Barr (p. 343) tells us that he originally introduced this variety of Daffodil from a bulb farm in Holland in 1876 or 1877, in which country it had been found in a farmer's garden. Is the variety wild in Holland? That it is abundantly naturalised in, even if not indigenous to, Ireland is a well-known fact. As to whether Ireland will ever compete with Holland in the matter of bulb farming is beside the question, but that some parts of Southern England and the Scilly Isles will eventually do so is a foregone conclusion. For all I know *N. princeps* may be an Italian plant, but that it is commonly naturalised in Ireland by the tens of thousands is a fact.—F. W. B.

Ornamental Vines.—Vines are all fine-foliaged plants, but some are handsomer than others, and some are even well worthy of culture as wall climbers. In this part of the south coast *Vitis humulifolia*, or the Hop-leaved Vine, is extensively used in that way, and very handsome it is when covered with its highly ornamental foliage and pretty clusters of berries. It enjoys a warm, sunny position, especially the roof of any building where it gets the benefit of reflected solar heat. It clings by means of its tendrils tightly to any support which it can reach; and for covering old tree stumps, Vines of all kinds, if once planted and given a start, make very pretty objects in a short time. They are vigorous growers, and in no way do they show their beauty so fully as when allowed to grow in wild luxuriance, with only sufficient fastening of the main shoots to keep them in position.—J. GROOM, *Gosport*.

Wintering bedding Pelargoniums.—On the approach of every winter numerous enquiries are set on foot as to the best mode of keeping old plants of Pelargoniums safely through the winter, and many are the devices adopted, with more or less success. One of the most frequent mistakes is that of cutting the shoots down at lifting time; the consequence of this is that the dampness of the atmosphere causes the shoots to decay, and unless the plants can be pushed into fresh growth by means of fire-heat, great portions of them perish. Now I find that the best plan is to lift carefully, so as not to break either roots or shoots, but to preserve both entire, pick off all the largest leaves, and then place the plants in boxes moderately thick, filling in around the roots with finely sifted soil; give one good soaking of water, and afterwards only enough to keep them from withering. Just enough fire-heat should be used to keep the atmosphere dry, as the less they grow at the darkest period of the year the better. As soon as the days begin to lengthen, however, more heat and moisture may be given, and every

shoot, if taken off and used as a cutting, will make good plants; the old plants will make fine bushes. Few plants are so easily propagated and grown as the Pelargonium, if only reasonable precautions are taken, but there are few more easily injured by using the knife too freely when vitality is at its lowest ebb. One may cut when growth is progressing freely, but when lifted, mutilating both roots and tops at once is more than even the hardiest plants can endure, and I need hardly say that the variegated-leaved sorts are more easily injured than the green-leaved kinds.—J. G., *Hants*.

IRIS SIBIRICA.

WITHIN the last half dozen years few plants have engaged so much attention as the truly beautiful Irises, and that they deserve all the encouragement they have received few will deny, the variety both of form and colour to be found amongst them being endless; and although some of the rarer sorts are taxing the patience of even our best growers, the time may not be far distant when a more thorough knowledge of their requirements will be attained. *I. sibirica*, itself one of the easiest to cultivate, has given us many distinct and graceful forms or varieties, and although not so plentiful as the germanica of the cottar's garden, is distinct and unique in habit, a circum-



Iris sibirica.

stance which enhances its value. *I. Kämpferi* and its many fine varieties form a sort of semi-aquatic section, for which a bog or similar place must be found, i.e., if they are to be had in perfection, but they may at the same time be grown in the ordinary border with a fair amount of success, provided plenty of water be given, and the plants are never allowed to get dry. *I. sibirica*, represented by the annexed engraving, on the other hand, has many wants, and, although it will grow fairly well in the ordinary border, never favours one with that depth of colour by which it is characterised unless it is grown in well prepared peaty soil. It grows from 2 feet to 3 feet high, and is neat in habit, the long, narrow, sharply pointed leaves rising from the crown in very regular form. The stems, which are hollow inside, each bear several flowers, bright blue in colour, with markings or nettings of a darker shade. It is a native of Siberia, &c., and flowers with us in May and June. It increases pretty rapidly at the root, by which it may be propagated, or by seed, which it ripens freely. K.

Lobelias from seed.—The blue *Lobelia speciosa* and its varieties are such indispensable plants with which to edge beds, borders, &c., that even in small gardens considerable numbers are used. For getting up stock of them here, plenty of space under glass is available, cuttings are probably best, but where glass is limited plants raised from seeds answer perfectly, especially if

sown in autumn and wintered in cold frames. I find October to be the best month for sowing the seed, for which we use boxes about 1½ feet long, 1 foot 3 inches wide, and 3 inches deep; in these we put 1 inch of drainage, fill up with finely sifted soil pressed down firmly and covered with silver sand, and on the latter the seed is spread moderately thick. If the soil is well watered before sowing and afterwards covered with a large sheet of glass, the young plants will soon appear, but very little water will be needed during the dark days of November and December. In the event of sharp frosts occurring the frames may be covered up for a week together without the plants taking any harm, but in mild periods they can hardly be too freely ventilated. In January or February the plants will be fit for pricking off into boxes or frames about 2 inches apart, and by keeping the points of the shoots closely pinched, excellent, sturdy, little plants will be ready for turning out in May. These will be found superior to those raised in heat in spring, for I find that, like *Calceolarias*, the less fire-heat they get the better; and I feel sure that anyone giving autumn sowing a trial will never sow in spring again—at least, such is my opinion. It is surprising how much frost blue *Lobelias* will endure, and in cold pits they are quite safe with plenty of external covering.—J. G., *Hants*.

Herbaceous plants from cuttings.—Now is a good time to increase one's stock of many varieties of herbaceous plants by means of cuttings, some kinds being difficult to increase by division. The tops of herbaceous Phloxes, for instance, where they have not bloomed, if cut off about 4 inches long make excellent cuttings. These, placed in a cold frame in sandy soil and kept close for a time, soon strike, and by spring have good roots, being an advantage gained over cuttings put in in spring. *Centranthus ruber* and *albus*, although some may consider them common plants, are useful for cutting from; they also brighten up the borders when in bloom, a condition in which they are more or less all the summer. Cuttings of the side shoots which have not bloomed strike freely. *Bupthalmum salicifolium* is another showy plant, usually well furnished with pale yellow flowers. It grows compactly, and is easily increased by cuttings made of the side shoots and put in a cold frame. *Cheiranthus alpinus*, which is dwarf and well adapted for the fronts of herbaceous borders, also strikes freely if inserted now in a cold frame. The Mule Pink treated in the same way will produce its bright magenta flowers all through the summer. It is compact in growth and well suited for the fronts of borders. *Hesperis matronalis*, *Iberis cordifolia* and *I. Tenoreana*, *Mimulus cardinalis*, *Matricaria inodora* fl.-pl., *Pentstemons*, Pinks, and many others may be treated in the same manner with success and involve very little trouble.—E. M. S.

SHORT NOTES.—FLOWER.

The fine *Lilium auratum* shown at Dundee, and of which favourable notice has been taken in THE GARDEN, was, it may be interesting to know, grown by Geo. Davidson, a house carpenter at Lochie.—W. JOHNSTONE, *The Elms, Arbroath*.

Hollyhock disease.—I fancy many experts must have been puzzled this season to account for the luxuriance of their Hollyhocks, heat and drought being considered to be favourable to the development of Hollyhock fungus. Any light that can be thrown on the subject cannot fail to be both interesting and instructive.—J. C. C.

Viola Mrs. Gray is so often recommended as the best white, that I feel constrained to give my opinion of it, which is that it is very delicate, late in coming into flower, and that the flowers stain so much through heat or drought in summer, that there is as much blue as white in them. It may be that the climate of the west of England does not suit it, but, be that as it may, it is much too delicate for spring bedding.—J. C. C.

Dividing Violas.—Every year about the middle of July we cut back all the flowering shoots on our Violas; we then earth them up with some fine sandy soil, working it well in between the cut-back shoots to the depth of an inch, and the same depth is continued for a few inches away from the plant. We are just now lifting our stock for transplanting, and we find that the new soil is full of roots emitted from the earthed-up stems; we are therefore able to make a large plant into three or four. This is a simple as well as a safe way of increasing our stock.—J. C. C.

Manure for herbaceous plants.—I had no intention of returning to this subject, and I should not do so now only I think I can in a few words explain the points on which "R. A. H. G." (p. 342) and I differ. "R. A. H. G." is his own master, and he can deal with his herbaceous borders in the way which he finds most conducive to success. If he leaves the old stems to die away on the plants until they have become dry sticks, he knows what he is doing, and bears with the effect of decaying matter, because he knows it is serving a useful purpose. So far so good. But surely "R. A. H. G." must know that that is the very practice that has brought more discredit on herbaceous borders than anything else; from that cause alone have they been considered weedy by those who do not so well understand the exact conditions under which they should be cultivated. Now as regards myself, as a gardener and having to deal with herbaceous borders like many others similarly situated, where the borders are beside prominent walks they must be kept sightly. If I were to work on the same lines as "R. A. H. G." it is quite possible that my ability to keep such borders in a presentable condition might be questioned; therefore, after all we do not differ so much in principle as in regard to details. But seeing that herbaceous borders are being generally re-introduced where a constant succession of flowers is expected to be kept up, I am quite satisfied that there are many soils that will require some stimulant to keep up their fertility.—J. C. C.

SEASONABLE WORK.

FLOWER GARDEN.

ROSE GARDEN.—If Roses be planted at this early season, they will next year flower just as freely as old-established plants. In our light soil we find it advantageous to lift all the plants every alternate year. They are heeled in for a couple of days or so till the beds are deeply trenched and manured with well-rotted stable manure. The soil is then well firmed by treading, and the plants at once put in, the roots having previously been examined as to the removal of useless portions, suckers, &c. They are at once staked, tied, and well mulched with Cocoa fibre for the winter. In strong, loamy soils (the best description for Roses) the treading must of course be dispensed with, except just as much as is needed when planting to keep each one in position and to ensure the soil being in close contact with the roots. We have observed that Roses moved thus early are not nearly so liable to injury from severe weather as are those not moved, the reason doubtless being that the check assists perfect maturity of the wood, the frost having the worst effect on plants full of sap. There is one drawback to this early transplanting, and that is the sacrificing of numbers of flowers which by reason of the protracted summer are this season more than usually abundant; still, it is better that this should be than to risk even the slightest failure at the proper Rose season.

SHRUBBERIES.—Till the leaves have all fallen not much can be done in the way of clearing out of shrubby clumps and plantations, but meanwhile any replanting or thinning out should have attention, and this will lighten the labour when a general clear up and mulching of shrubs that have been lately transplanted has to be done, which should take place as soon as all danger of further litter from leaves, &c., has passed. As a rule shrubberies do not receive that amount of cultural attention which in all cases they well deserve, Couch, Nettles, Docks, Brambles, and the like too frequently holding sway amongst them; and it is only with a view to the extirpation and prevention of these weeds getting the upper hand that we would advise that the clumps be forked over annually. Push along with the preparation of ground that has to be planted this winter; plenty of drain-pipes and a free outlet in low-lying situations are the first essentials of success. In such positions it is also a good plan to raise the soil well above the general ground level, but if

such raising be considered objectionable, it is not really necessary so long as the drainage at bottom is effectively done.

GENERAL WORK.—There is now, and will be for some time to come, plenty of sweeping and raking up of leaves and rolling to remove worm casts—heartless work, certainly, but in the interest of neatness and satisfaction to all concerned it should be done regularly. Walks that need re-gravelling or fresh surfacing can also now be done, and all should be freed of weeds and well rolled down now that there has been abundance of rain to admit of the roller having full effect on them. Uneven parts of the lawn should now be levelled, and any that need returfing be done at the first convenience; in fact, alterations of every kind should, whilst the weather continues so open, be proceeded with as expeditiously as possible.

FLORAL DECORATIONS.

HAVING been favoured with such mild weather for the time of year and an unusual absence of white frosts, we have been able up to the present time to get a good supply of bloom from single Dahlias, *Anemone japonica*, late Hybrid Perpetual Roses, East Lothian, scarlet, purple, and white Stocks, White Lady Heliotrope, and *Begonia ascotensis*, all of which are still in flower in open borders. Sprays of the Lemon-scented *Verbena* (*Aloysia citriodora*) have also been useful, being ever welcome for the sake of their perfume. We recently took the opportunity of a bright sunny day to secure all the perfect flowers, and even the undeveloped ones of the *Helichrys*ums, catching them for once when they were just at their best. These will all come into use for various purposes, along with dried Grasses previously secured. *Jasminum nudiflorum* is thus early opening some of its flowers, and expanded trusses may be found on the *Laurustinus*, so that even yet for a few weeks outdoor flowers can be had by those who do not rely on an indoor supply. Violets are also flowering freely in places, though with us they have scarcely yet opened a flower. Of indoor flowers we are now deriving an abundant supply from a pitful of *Bouvardias* grown in the open soil; these are flowering splendidly, and prove valuable for button-hole bouquets and specimen glasses. Our most useful sorts are *B. Hogarthii*, *Vreelandii*, and *umbellata carnea*. Sweet-scented kinds, as *Humboldtii corymbiflora*, are not approved of here; therefore scarcely any of them are grown. For other specimen glasses we have had a good supply of *Dipladenias* and *Eucharis* up to the present time, and occasional trusses of *Ixora* have been useful for the same purpose. So likewise have the yellow and white Paris Daisies, the former in particular. Sprays of the winter-flowering *Epacris*es in various shades of colour are also very serviceable; from the beginning of this month on throughout the winter we shall have them in abundance, and very valuable they are for almost all kinds of arrangements. With us *Chrysanthemums* of all sections are backward, but, considering the season, this is fortunate. Later on we shall, no doubt, be glad of them. *Davallia bullata* still proves to be one of the very best Ferns in a cut state, excepting the Maiden-hair (*Adiantum cuneatum*). We now use the former rather freely, as the whole of the fronds will soon die off, and the plants go to rest for the winter. Leaves of several kinds of Grape Vines are excellent now for the dessert; the brilliant tints in many of the late kinds especially cause these to be valuable between now and Christmas. In dishing up some fruit lately we used sprays of the Virginia Creeper in the case of some tall dishes of nearly white china, entwined around the stems of which they were very effective. Coloured foliage, in fact, is now plentiful everywhere, and may be advantageously used in many ways.

PROPAGATION.

THIS will now be confined principally to hardy plants. As regards cuttings of stove and greenhouse plants, all that will be necessary will be

to keep them well watered; give them air when moisture condenses too freely, and above all remove any decaying matter. Care must also be taken not to shade too heavily, although of course cuttings of most plants recently put in will require a certain amount, but as a rule it need not be put on before ten o'clock, and should be removed soon after three, even on bright days. Where it is desired to propagate in quantity *Primulas* of the *amœna* section, the present is a suitable time for so doing, as they are in most cases dormant and succeed better than when divided later. For this purpose break up the mass of roots and select the strong crowns to be repotted, several in a pot for flowering purposes, which they will do in the spring without showing any ill effects from removal, and where there are great numbers of strong roots attached to them, a few may be taken off without weakening the plant. All the small crowns should then be sorted out and dibbled into a frame in which is a prepared bed, consisting of loam, lightened by a liberal admixture of leaf-mould. Any piece of root taken off during the process, even if without perceptible eyes, should not be thrown away, but cut into lengths of about 1 inch, and dibbled thickly into pots or pans of sandy soil. These, if kept in a cold frame, will push forth buds in spring from the upper part, and root action will also commence, when they may be potted off or dibbled into a frame as recommended above. The Himalayan *Primula denticulata* may also be propagated to any extent in this way. Cuttings of deciduous trees and shrubs will strike better put in now than two months later, although the latter practice is most frequently followed, especially where cuttings of all kinds are put in on an extensive scale, as in that case they can be prepared during bad or severe weather, whereas now many other things demand attention. For such cuttings choose to some extent a sheltered spot, both from the drying winds of March and the hot sunshine of the summer, and where the soil is not too tenacious, but rather of a light, open character. Take firm, well-rooted shoots, leave them from 12 inches to 15 inches long, and insert about three parts of their length in the ground. The latter having been dug, stretch a line in the direction which the rows of cuttings are intended to take. Make a trench, one side of which should be quite firm, and against this place the cuttings in an upright position, with the base of each resting on the bottom of the trench; this done, fill up with soil and tread firmly. Special attention must be given to this last operation, or failure will be the result. About 1 foot is a good distance between the rows, as it allows of a hoe to be used during the following summer, but the cuttings may stand about 3 inches asunder in the rows. Where propagated in large quantities, as has just been stated, they are generally left till later in the season, in which case the cuttings are made, sorted, and tied up in bundles ready for insertion, and laid in till the weather is suitable for that purpose. In either case they will want little or no attention, except to keep them clear of weeds, and if the summer be very dry watering them occasionally; by autumn they will in most cases be rooted and ready for transplanting. Evergreens should be all in before this time.

INDOOR PLANTS.

DOUBLE PRIMULAS.—These ought now to have a little warmth if their flowers are required soon, and under any circumstances they must not be kept too cool, or they are all but certain to suffer by damp. If not potted sufficiently deep in the soil, a little should be added, so that it comes right up to and slightly covers the base of the lower leaves. At first sight this practice would seem to endanger their damping at the collar, but it has a directly opposite effect.

HARDY PLANTS for forcing should now be taken up and potted. These include *Roses*, *Deutzias*, *Azalea mollis* and the Ghent varieties, *Rhododendrons*, double *Prunus*, *Andromedas*, *Lilacs*, *Laurustinus*, &c., for, though the leaves of some of the deciduous things may not yet be off, still the

buds are now fully matured; and it is much better to get work of this description done at once and to have the plants in hand, so that the pots may be plunged where they can be protected in a way that will prevent the soil getting saturated with wet. A sufficient quantity of *Dielytras* and *Spiræas* should be treated in like manner, so as to have them in readiness for potting in warmth later on.

CHRYSANTHEMUMS.—If fine flowers are wanted the buds must be thinned, for all varieties form very many more than they can perfect. The extent, however, to which the thinning process should be carried with individual kinds can only be arrived at by observation. Nevertheless, as some guide to the matter, it may be accepted as a rule that the larger the flowers the variety produces, the fewer it will be able to fully develop; and, with few exceptions, the incurved kinds cannot support near so many as those with reflexed petals, of which latter the old yellow variety, *Annie Salter*, may be taken as an example. The latest flowering sorts are much the most useful; consequently, we have always found it advisable to thin these the most, for the fewer flowers a plant is allowed to bear the longer the individual blooms will last after they are expanded. The plants are better out-of-doors, so long as they are not in danger of being subjected to more than 2° or 3° of frost, for if housed too soon, unless stood thinly in a very light, airy structure, they get drawn and suffer from the attacks of mildew. On the first appearance of this, sulphur should be dusted on the affected leaves, otherwise the fungus spreads most rapidly, disfiguring the plants as well as affecting their ability to mature their bloom. A little more soot, say about a quarter of an inch, laid on the surface of the pots will much assist the development of the buds, and will also banish worms from the soil.

CONSERVATORY.—There is considerable difference in what can be done in structures that come under this denomination, on account of the difference in the temperature kept up. Where the principal occupants are such as only require or will bear a temperature similar to that of an ordinary greenhouse, anything that needs more heat cannot at this season be accommodated. The early-flowering *Chrysanthemums*, of which there are several that bloom well through October; early-blooming *Salvias*, of which *S. Bethelli* is one of the most distinct and freest flowerers; early varieties of *Epacris*, *Veronicas*, *Witsenia corymbosa*, *Primulas*, *Lasiandras*, *Heliotropes*, *Croweas*, and *Cyclamens* will be the principal things to be depended upon, along with a selection of light and dark-coloured zonal *Pelargoniums*, which, if well managed, are much more useful at this season than in the spring and summer, when their presence in large numbers often gives insufficient room for enough variety. In the way of roof climbers there is not much in bloom at this season, but where there is a good plant of *Habrothamnus elegans* and the beautiful *Mandevilla suaveolens*, with red and white *Lapagerias*, these four will give a cheerful appearance to the structure. Such roof climbers as are not in flower and have at all extended so as to shade the general occupants of the house should be well cut in, using judgment in the work, for if the shoots of all are indiscriminately shortened, the result is that a good many never bloom satisfactorily. In place of this it is much better with all plants that flower from the ripened previous season's growth to thin out and cut away completely such a number of the shoots as will bring the plants within reasonable compass.

FRUIT.

PEACHES.—Where the lights have been taken off the roof of the early house they may be replaced towards the end of the month. In many places in years gone by it was the practice to close for forcing in November; but, thanks to the late Mr. Rivers, early Peaches and Nectarines of his raising or introduction, started a month late, still give us ripe fruit for the Queen's birthday. If all the old fruit-bearing shoots have been care-

fully removed, as previously advised, but little pruning will be needed. It will, however, be necessary for an experienced hand to go over the trees after they are let down from the trellis, when the usual cleansing may be performed, and tying in will give work for days unfavourable to outdoor operations. When all is finished remove loose materials and inert soil from the surface of the borders, and replace with fresh compost consisting of strong calcareous turfy loam, old lime rubble, or charred refuse. Be guided by the state of the trees in the application of manure; if old and weakened by heavy cropping, a good dressing in the autumn will be a great help, while vigorous young trees will be best without it until the crop is set and swelling. See that the internal borders are thoroughly moistened before they are top-dressed, as dryness at the roots in winter is fatal to good Peach culture.

LATE HOUSES.—The trees in this department are now quite ripe, and promise a profusion of good blossom. If the wood has been properly thinned and the houses are not wanted for plants allow the leaves to fall naturally and give an abundance of air, but do not remove the lights from the roof unless they require painting. Let all root pruning, lifting, and border-making be brought to a close at once, as trees on open walls have set their flower-buds and may be removed with safety.

FRUIT ROOM.—By this time the latest Pears and Apples will have been gathered and stored away in the fruit room, which must be kept cool and well ventilated to admit of the escape of moisture. For some time after the fruit is stored it will be necessary to look over the shelves at least once a week for decaying specimens before they have time to taint the sound ones, which they will soon do if this precaution is neglected. Late kinds of Apples and Pears should be placed in a cool room where the temperature does not fluctuate, and when the time for ripening approaches dessert Pears will be greatly improved in flavour by removal to a higher temperature for a few days before they are wanted for use. To prolong the season of the finest kinds unblemished fruit from the latest gatherings should be stored away in clean earthen jars and covered with a few fronds of dry Bracken, an invaluable article in the fruit room, as it absorbs moisture and does not impart an unpleasant flavour to the fruit. Owners of model fruit rooms, capable of resisting 20° to 30° of frost without firing, do not require covering of any kind; but unfortunately they are the exception to the rule, as many gardeners have to make use of an upper storey, which is affected by every change from heat to cold, from drought to chilling dampness, with nothing better than a batten of straw (the worse thing they can use) for keeping out the frost. Where this is the case, good dry Fern, if obtainable, combined with extreme cleanliness, will be found the best covering material that can be used.

PLUMS AND CHERRIES.—The above treatment as to the removal of exhausted top-dressing applies to these also; and it is surprising how quickly fresh roots find their way into the new compost. In course of time these trees make very little wood, and become thickly set with blossom buds, which may require thinning out for the twofold purpose of preventing exhaustion and facilitating the cleansing process. When all the trees have been arranged in blocks or rows for the winter or season of rest, throw a light, but rather small meshed, fishing net over them to keep off small birds, otherwise they will soon ruin the prospect of fruit when the buds begin to swell.

CHERRY HOUSE.—Nothing will be gained by leaving the trees exposed after the end of this month. If the lights and rafters were painted immediately after removal, the paint will now be firm and in the best possible condition for resisting the weather. The painting of forcing houses forms such a heavy item in the expenditure, that too much attention cannot be devoted to the extraction of moisture from the wood before it is painted and proper hardening before the lights are again wanted for use. If the usual occupants of

cold houses are placed under the trees for protection from the elements, they should be capable of standing a very low temperature, that is to say, an approach to the freezing point, as *Cherries* under glass are easily excited after a long season of rest. Follow former directions with regard to cleansing, and spare no pains in getting rid of the larvæ of aphids, the most troublesome insect we have to contend with when the trees are in flower. *Gishurst compound*, eight ounces to the gallon, makes an excellent wash for the trees and trellis. When quite dry, tie in and ventilate to the full extent in mild weather until the time arrives for starting.

VINES.—The late excessive fall of rain having permeated every part of the external borders, some kind of covering should now be placed over the main roots of *Muscats*, *Lady Downes*, and other late kinds intended for winter use or bottling. By this time the former will have attained perfection, and the latter will be sufficiently advanced to admit of a general lowering of the temperature to about 55° at night and a few degrees higher by day, when gentle fire-heat is needed to keep the atmosphere of the houses dry and favourable to the ripening of the foliage. Houses in which the remains of the crop of late summer Grapes are still hanging may now be cleared with advantage, as the bunches will keep quite as well, if not better, in the Grape room. The Vines can then be divested of all lateral growths and subjected to a course of dry fire-heat to insure the perfect maturation of the wood.

Prune successional houses as soon as the leaves fall, and take advantage of wet days for cleansing the canes; also wash or paint the internal wood-work and ventilate freely if, as is too often the case, they are not wanted for plants. If the earliest house was pruned at the end of September and shutting up in November is contemplated, a course of gradual watering will now be needful to bring the internal borders into a satisfactory state before the Vines are excited by the application of artificial heat. Pot Vines which were shortened back about the same time may also be watered, top-dressed, and placed in position, and as these do not always break so kindly as old Vines which have been forced for a number of years, it will be well to tie down the points before the terminal buds begin to swell. Remove planting canes to the shelter of a wall, place pieces of tile under the pots to keep out worms, and cover up with spent tan or Fern to protect the roots from frost.

ORCHIDS.

EAST INDIA HOUSE.—The change in the out-of-doors temperature, especially at night, has directed attention to the heating apparatus. There has been rather more than the average amount of sunshine, but the shading material has now been dispensed with, so that there has been no great difficulty in shutting up the house with a high temperature. It is towards morning that the temperature falls below the minimum, but there is no need that it should do so if ordinary care is exercised. It is safer to have the temperature of this house rather over than under the minimum of 65°, as some plants, notably some of the *Phalænopsis*, which are near the glass, may suffer with the lower temperature. *Epidendrum bicornutum* has been brought into notice lately, and is a charming species seldom well managed. It does best near the roof glass in the warmest part of the house, and is more easily injured by cold than the *Phalænopsis*. Some people have been very successful with this *Epidendrum* by merely growing it in a warm stove, where the plants are frequently syringed. The house ought not to be very damp at the time the flowers open, as they are delicate and easily injured by decay spots. The singular-looking, though handsome, *Grammatophyllum Ellisii* does best near the roof glass in this house. The growths will now be formed, and the only chance to get some of the plants to flower is to keep them as dry as they will stand it during the winter. The arrangement of the plants in the cool

and warmest end of the house is a matter of great importance. In some of our houses we find the difference in temperature as much as 5°. Those who are fond of *Bolleae* and *Pescatoreas* will find the cool end of this house the best place to winter them in. They are a class of plants that do not take kindly to artificial treatment; they must not suffer for want of water either at the roots or in the atmosphere; the leaves also to be kept clean by careful sponging. The deciduous winter-flowering *Calanthes* prefer the warmest end of the house at this season. Our plan is to keep them warm until the first flowers on the spikes are about opening, when they are removed to a light part of the *Cattleya* house. The flowers open well here, and the leaves speedily die off in the cooler temperature.

CATTELEYA HOUSE.—We are not fearful of the plants in this house being injured in the same way as those in the warmest division. Of course, it is as well to keep the temperature as nearly uniform as possible, and where there is but one heating apparatus for all the divisions, the work is greatly simplified. There is no need to use much water for evaporating purposes. If the paths are damped twice a day and the stages once, it will be quite sufficient. The occupants of the house require of course very different treatment; some plants are in the midst of their growth, others are maturing their bulbs. As regards watering, the *Cymbidiums* will yet require a full supply, especially *C. Lowi*, which has not yet completed its growth. This species should be suspended near the glass with the tips of the leaves almost touching it. We saw it growing and flowering very freely the other day, potted in much the same compost as one would use for *Pelargoniums* or any soft-wooded plants. Our own are potted in peat with a little *Sphagnum* and give equal satisfaction. *C. Mastersi* is now showing its flower-spikes, and placed on a side stage with *C. eburneum* they are looking vigorous, the foliage of a deep green colour. The potting material for these is principally turfy loam with a little decayed manure. Nearly all the deciduous and most of the evergreen *Dendrobiums* have about finished their growths, and a few of the earliest of them will immediately be removed into the greenhouse or someinery where the Vines are at rest and the atmosphere dry. *D. Wardianum*, for instance, has a tendency to start into growth again as soon almost as the old growths are formed, but the instant it is seen that the secondary buds are forming, the plants must be taken into the cool house. Those removed into a greenhouse temperature are *D. Wardianum*, *D. crassinode*, *D. nobile*, *D. Falconeri*, and others of this type. Those that remain in the *Cattleya* house, but are dried off in winter, are *D. densiflorum*, *D. Farmeri*, *D. Schroederi*, *D. Griffithianum*, *D. Devonianum*, *D. Bensoniæ*, and some others. We are trying some plants in the *Cattleya* house this year that have been usually wintered in the cool house. Our cool house used to be a span-roof running north and south; now it is a lean-to with a north aspect, and plants that used to do well with us partially fail under the new arrangement. *Odontoglossum cirrhosum* requires more heat and light than it gets in a lean-to house of the above description, and nearly all the *Masdevallias* will do with 5° more heat than *Odontoglossum Alexandre*, *O. Pescatorei*, *Oncidium macranthum*, and some others. We saw last winter a fine lot of *Masdevallia Harryana* and others requiring similar treatment in a *Cattleya* house, where the atmosphere was unusually dry, and yet the plants were in much better condition than our own in the cool house. A practical demonstration of this kind is of inestimable value to the practical cultivator. *M. towarensis* and the chamæroid species have always been treated to a *Cattleya* house temperature; probably the numbers requiring it will be indefinitely increased. This is acting on the assumption that the minimum temperature is 55°, falling occasionally to 50°.

COOL HOUSE.—The treatment of the plants must vary a little according to the form and position

of the house in which they are growing. We are inclined to attach considerable importance to the matter of atmospheric moisture. Some persons have an idea that cool Orchids should be grown in an atmosphere constantly saturated with moisture, and this during the dull, dark days of winter as well as in the heat of summer. Recent importations seem to grow away freely enough at first under such conditions, and give fairly satisfactory results for the first year or two; but old established plants need a decided season of rest to keep them in a healthy state. At this time of the year the water supply, both in the atmosphere and at the roots, must be considerably reduced. A span-roofed house well exposed to the sun will require much more moisture than one of a lean-to description facing north. The one may require damping three times in a day and the other not more than once or twice at present. All the details would be much more simplified if the plants made their growth in the summer, matured them in the autumn, and rested in the winter. This will never happen; and as all through the winter *Odontoglossums*, *Masdevallias*, *Oncidiums*, &c., are making their growths, more moisture will be required; but this is a matter which must be left to the individual judgment of the cultivator. For our own part the longer we have to do with Orchids the more we feel inclined to treat them to a dry atmosphere in winter and to keep them from being unduly excited by a higher temperature than may be thought necessary. If the house contains *Masdevallias* as well as *Odontoglossums*, 50° is a better minimum than 45°.

THE ROCK GARDEN.

CAMPANULA GARGANICA is a charming plant for the base of a rock, and if planted partly under an overhanging stone, it will show itself off to considerable advantage, clinging, as it were, to the under surface of the stone. *C. fragilis*, often confounded with the *Garganian Hairbell*, is not so desirable for the purpose just mentioned, for its tendency is to hang, whereas that of the species in question is to grow in an upright manner. One great drawback towards this plant becoming more popular than it is is its impatience of division, and the consequent necessity of propagation by cuttings. A bronze-flowered variety of the alpine Wallflower is very ornamental and of easy culture. Amongst Pinks, *Dianthus alpinus*, a diminutive rose-flowered kind, grows in calcareous soil; so also does the Cheddar Pink (*D. cæsius*), and upon walls. In Mr. Ellacombe's garden, at Bitton, we saw some fine examples of the Maiden Pink (*D. deltoides*) growing on a high wall, and the pale-flowered variety of this Pink would be equally well adapted, we should think, for walls. Whether seedlings now appearing about this variety will come true to their parent, or revert to the type, has yet to be proved. Like the rest, it enjoys a lime soil. *D. neglectus*, the Glacial Pink, a beautiful species, is rather difficult to grow, that is if one does not give it the soil which it requires. It grows upon the primary rocks. We can grow it in loam, but it fails in limestone; but the soil it likes best should be analogous to that of its native habitat, that is, peat, loam, and granite gravel. The same treatment will suit the nearly allied, quite as beautiful, and earlier flowering typical *D. glacialis*. *Epilobium Dodonæi* is a plant of very easy culture, seedlings springing up around the parents. Really, according to stature ultimately attained, it ought to be classed amongst border plants, but flowering early in the year and upon its young growths until September, and its seedlings flowering too in their early stages of growth, is well worth a place in the rock garden. It is interesting to note how a nearly allied species, *E. Fleischeri*, under cultivation adapts itself to a limestone soil, while in its native habitat it grows on a soil entirely free from lime; its relative, on the other hand, prefers lime. If ever there was an alpine Aster (*Erigeron*) worthy of cultivation it is *E. glaucum*, a hybrid variety. It is harder than the type and more abundant as regards flowering. Its blossoms, too, are quite as large as those of the type, and possess a charming

rosy tinge. The flower-stems are not erect, but decumbent, and while the type shows no sign of flowering until the approach of autumn, this flowers persistently from spring until autumn. The *Heron's-bills* are a genus worthy of more general culture than has hitherto been given them. Of the self-sowing group with finely divided leaves may be mentioned *Erodium cheilanthesifolium*, *E. petraeum*, *E. macradenum*, and *E. absinthioides*. There are also two biennial *Epilobiums* worthy of culture, rather coarse in habit, with ovate leaves, deeply lobed at the base, which sow themselves freely.

KITCHEN GARDEN.

No time should now be lost in lifting and properly storing Potatoes. We question if any system is better than hilling them up in pits, laying them in rows about 5 feet wide, and putting from 6 tons to 7 tons in each heap. Scotch Champions with us are a wonderfully fine crop, and the few diseased tubers among them are not worth mentioning; the quality is excellent in all ways, except that they are deep-eyed. We are also busy lifting Turnips and Carrots, which we pit in the same manner as Potatoes. We are trenching and highly manuring one of our south borders for early Peas, which we always sow from the 5th to the 12th of November as follows: We draw the drills 4 feet apart, roll all the seeds in red lead to keep off mice, and directly the young plants break through the ground we cover with ashes to keep away slugs, and put across them strings of red worsted to frighten off the birds. It is a mistaken idea to suppose that frost kills young Peas; what kills them are the sharp surface winds that occur in February and March. Therefore stick them as soon as possible, putting Scotch or Silver Fir branches up each side. The usual look-out in the case of all young crops, such as Cabbage or Lettuce, should be given for grubs, and the soil between the rows should be stirred occasionally.

WORK DONE IN WEEK ENDING OCT. 21, 1884.

OCTOBER 15.

ANOTHER return of summer; truly, this is an unusually favourable season. Slight frost has blackened *Alternantheras* and *Coleus* a little, but every plant else has escaped. Single *Dahlias*, *Marguerites*, *Fuchsias*, and *Pelargoniums* are yet in full glory, and numerous hardy perennials. Asters in particular are still flowering marvellously well, and therefore we daily try to make the most of such beauty by keeping all the surroundings in neat condition, by sweeping up fallen leaves and worm casts whenever time can be spared for doing work that now requires to be repeated almost daily. But when we have done with mowing and sweeping we must balance against that work the grandeur that just now is presented by deciduous trees, which is worth all the labour entailed by shedding their foliage. I would like to add, for the information of intending planters, that two species of trees are specially worthy of attention for autumnal effect; they are *Liquidambar styraciflua* and *Liriodendron Tulipifera* (Tulip tree). Both these are just now a gorgeous golden yellow, with here and there a tip of bronzy red. Both trees stand out conspicuously beautiful amid numerous other splendid autumnal-tinted trees. Completed Apple gathering. Court pendu Plat and one or two other late sorts would perhaps have been better had they been left a week or so longer, but as they were falling (I think owing to the extended drought), we deemed it best to gather them. Housed Carrots; westack them in a cool shed, using a little dry soil between each layer, and by taking care to stack those only that are really sound, we are seldom troubled with decay amongst them, and they keep just as firm as if in the ground. Parsnips are left in the ground till new growth begins in spring, and Beet is also left in the ground as long as it is safe to leave it. Occasionally we have left it in the ground all winter and protected it from frost with Bracken, and there can be no doubt but that this is the best way to winter it for preservation of juiciness and quality

generally; but then the ground to so winter it cannot always be spared, but must be got ready for spring cropping, and when this is a necessity, the next best mode of wintering is that mentioned for Carrots. Finished the propagation of Violas; they are put in cold frames and handlights. Sundry hardy carpeting plants, as Sedums, *Herniarias*, *Veronicas*, and *Thymes*, are being propagated by planting small bits on borders having a southern exposure. All such kinds of plants need renewal every spring, and this we find the best way of getting new stock.

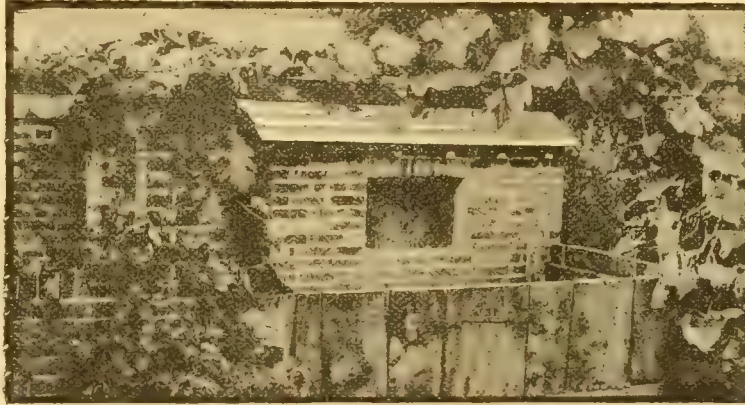
OCTOBER 16.

We shall soon be ashamed of writing "sweeping up," so that if readers do not happen to come across the words, they had better take for granted that we still have some on hand, and do as much as other and more important duties will admit of our doing. Apricot trees die with us in that mysterious way peculiar to them in most other gardens, and having long since given up trying to solve the mystery, we now replace with healthy trees as soon as any collapse; to-day two have been grubbed up, the ground trenched and fresh soil added, and two healthy young trees planted. We had them in reserve, and having lifted with plenty of small fibrous roots and good balls of soil adhering, they are expected to fruit next year just the same as if they had never been moved; this, in fact, is why we have transplanted so early. A soaking of water and a mulching of litter have been given them, the former to well settle the soil about the roots, and the latter to exclude frost and drought. Our Peach wall border is being trenched, and all the roots at 4 feet from the wall is being cut clean off as trenching proceeds. Soon as the leaves are off, the 4 feet next the trees will have all the surface soil taken away, and this will be replaced with good loam, a few half-inch bones, and rotten manure, and over the whole a mulching of stable litter. This is the whole of our culture (as regards the roots), and has generally proved satisfactory, for it has rarely happened that there has not been an abundant crop of fruit, whilst foliage and wood have been all that could be desired. I ought, perhaps, to add that the border is used for such crops as early Potatoes, Lettuce, and French Beans, and being heavily manured annually the new roots that the Peach trees make from the line of root pruning get as good a share of the manure as do the vegetable crops; indeed, it is this unavoidable circumstance that renders annual restriction of root growth a necessity. The 4-foot space is never disturbed, except to rake off the loose top soil to apply fresh top-dressing, and yet is a complete network of roots, and as hard as the garden walks. Apricots, Grapes, and Strawberries are other fruits that delight in having their roots in firm soil. I have always observed that if any part of a border containing these fruits has had more trampling than another, there, to a certainty, would be found the most roots, not the thickest certainly, but frills of them; the quill size run the whole length of the borders, and to destruction too, for they are generally dead when most needed. Indoor Figs are over for this year, and the wood being ripe the lights are left quite open, but will be closed on cold frosty nights, a precaution that we deem necessary to preserve from injury the embryo fruit that is now to be seen on the principal shoots, the dropping of which when about half grown being, I believe, attributable to winter injury from cold more than to any other cause. The lights of Pine pits and all other frames are being well washed, as besides the neatness, which counts for something, the added light to the plants must be of some benefit. Grapes have been examined as to removal of bad berries, and any laterals having the

faintest taint of mildew on them have been cut away. The latest houses—Lady Downes and Alicante—having inside borders were well watered, and this may possibly serve them till the fruit is cut for preservation in bottles.

OCTOBER 17.

Summer-like weather. Trenching, also earthed up Broccoli, late Savoys, and Scotch Kales, and hoed between the rows of winter Spinach, Onions, Lettuce, and Endive; also sowed Lettuce on a south bank; Black-seeded Bath Cos is our best winter variety. Lifted and potted a few *Pelargoniums* that we want for stock and a few of the rarer plants from the sub-tropical beds. Gathered ripe Dahlia seeds, and completed the labelling of such as we wish to preserve. Trimmed up the herbaceous plant borders. Many plants are now getting to look rusty, and these have had their decaying stems cut off, and pegs or labels put in to indicate their whereabouts when the borders are given their annual dressing and rearrangements. Planted out another batch of Queen and Brompton Stocks, Canterbury Bells, and Antirrhinums; all these will prove useful for cut-flower purposes early in the spring. Pinched off runners from Violets in frames; at present the flowers are picked as fast as produced, that the plants may get as strong as possible before mid-winter when growth is stationary, more by reason of persistency of flowering, perhaps, than from



Gourds on pig-stye.

shortened daylight and sunshine. Partially pruned midseason Vines; they are all Black Hamburgs, and at least sixty years old; and as showing the fallacy of waiting till the leaves have all fallen before pruning is done, I may say that for many years they have been pruned whilst a large proportion of the leaves have been on, and without any perceptible injury. Were we to wait till all the leaves dropped naturally, it would not be till the sap had become active, as once we proved by the loss of vigour through bleeding, solely through waiting for the leaves to fall. The partial pruning that was done to-day consisted in cutting back all the shoots to within 6 inches or 9 inches of the main stem. This check done now stops all further attempt at growth, and hastens the maturing of the large leaves nearest the main stem, and thus prepares the way for final pruning a fortnight hence.

OCTOBER 18.

In addition to the usual weekly round of cleaning up here, there, and everywhere, and about which it is not necessary to write more fully, we to-day managed to get weeded Parsley, herb, and other narrow borders in the kitchen garden, a department that we delight to honour by neatness equally with the more ornamental parts, though, unfortunately, short-handedness sometimes compels us to neglect it; but the well-being of the crops, as well as our own hatred of weeds, does not allow the neglect to be long continued. This splendid season has given no quarter or excuse to any of us in the matter of weediness.

OCTOBER 20.

Gathered all outside Tomatoes that were likely to ripen their fruit if hung on the trellis in the houses. Of course they are not so highly flavoured as are fruit that ripen naturally, but they do fairly well, and help to eke out a scanty supply from indoors. Earthing Celery and trenching have been other kitchen garden "doings" to-day. In the houses the work has been solely preparatory to housing flower garden plants, space being made for these by shifting *Bouvardias*, *Poinsettias*, winter-flowering *Pelargoniums*, &c., from cold frames into warmer quarters, bad flowers, leaves, weeds, and Moss from the surface of the pots being cleared as the plants were moved. In another direction also preparatory work has been done, namely, cutting of Heather in turves to form a groundwork for beds in which *Alternantheras* have been used. The closely rabbit-nibbled pieces are what we prefer, and it is simply pressed on the ground, the dot or central plants of the designs being planted previously; many of them, indeed, have done duty during the summer, such as *Chamaepeuces* (green and grey Thistles), *Aralia Sieboldi*, small *Retinosporas*, and *Yuccas*. Of course all are not so favoured as to have the Heather to cut at, but they may have the commoner Sedums—planted with this intent—and use them just in the same way, or, on a small scale, Cocoa-fibre refuse will answer the same ends; at any rate, this material gives a pleasing tone of colour to bare places in beds when there are not sufficient plants to fill out with.

OCTOBER 21.

Cut all Black Hamburg Grapes and put them in bottles; from now onwards with us this variety keeps far better in the Grape room than on the Vines. Our Grape room is heated, but very rarely indeed do we require to turn the heat on, the temperature seldom receding lower than 45°, our average being about 48°. Damp more than cold is what has to be guarded against, and it is to expel this that fire is oftener required than for warmth, and whilst the heat is on both door and ventilators are left open. The Hamburg vinery can now be utilised for plants, and *Chrysanthemums*, *Azaleas*, *Australian Dracenas*, *Fuchsias*, and *Palms* are already being put in it. Potted for forcing from the open ground layers of White Clove Carnation, *Gloire de Nancy*, and *Pink Mrs. Sinkins*, two of the very best of these classes of plants that have ever been introduced, and both force as well as does the old white, or, in fact, as any other forcing *Pink* or *Carnation*. Potted the first batch of *Spiraea japonica* for forcing. We have two sets of plants, those forced last winter and spring being planted out as soon as turned out of the forcing pit, and they will not be used again till next autumn; they have then two seasons to recruit their energies. The plants now being potted are those that were forced in the winter and spring of 1882 and 1883, and having been grown on a deeply trenched soil they are all that can be desired. We used the smallest size pots that the plants can be got into, as the plants are mostly required for furnishing baskets and vases in rooms. Were the plants required for cut-flower purposes only, we would use larger pots with a view to save time in watering, of which they require abundant supplies. Work in other departments has been much the same as yesterday, with clipping of Privet hedges in framing ground and turf-cutting for potting purposes added.

HANTS.

ORNAMENTAL PIG-STYE.

HERE is a little picture from a photograph which a lady sends us, showing the use of Gourds, and which tells its own tale. There is no doubt these fat Gourds have fine ornamental qualities and

are seldom seen, because the one kind we grow is generally allowed to grow flat on the ground. The finer Gourds grow freely up the roofs of low buildings, along low walls, and up stakes. As their great fruits swell up in the autumn their effect is extremely handsome, and they are worthy of gracing many better positions than that shown in our illustration.

RECENT PLANT PORTRAITS.

VRIESIA FENESTRALIS (*Belgique Horticole* for March, 1884).—A fine double plate of this Brazilian Bromeliad, which has light green, strap-shaped leaves, latticed all over with curious lines, whence its specific name. The flowers are greenish with brown spots on outer tube, and the inside edges of the petals, which are slightly reflexed, are greenish white. The flowers are produced on a tall slight stem, with curious regularity alternately on either side.

ORNITHOCYPHALUS GRANDIFLORUS (*Belgique Horticole* for April, 1884).—A rather insignificant greenish white-flowered Orchid from the cooler regions of Brazil, and requiring only the temperature of a warm greenhouse for its cultivation.

FRITILLARIA IMPERIALIS INODORA (Regel's *Gartenflora*, plate 1165).—A variety of Crown Imperial with medium-sized reddish brown flowers, said to be totally devoid of the unpleasant smell for which these plants are all usually remarkable.

ETHOCARPUS PURPURASCENS (Regel's *Gartenflora*, plate 1166).—A rather insignificant and dull purplish flowered Californian annual belonging to the family of the Scrophulariaceae, which bloomed for the first time in May, 1883, in the nursery garden of Messrs. Haage and Schmidt, of Erfurt. Though the foliage is pretty, it can scarcely be considered an acquisition.

VANDA SANDERIANA (*Illustration Horticole*, plate 532).—A fine double plate of this most beautiful Orchid, which is a native of Mindanao, one of the Southern Philippine Islands, where it is found growing on the branches of trees in slightly shaded localities, and blooming in the month of October. It was first imported by Messrs. Sander, of St. Albans, and has far the largest blooms of any of its family as yet known to European gardeners, reminding one in size and shape of the finest forms of *Odontoglossum vexillarium*.

DAHLIA COCCINEA VAR. NOVE (*Illustration Horticole*, plate 533).—Three pretty single-flowered Dahlias are here figured, one of them, a fine shade of dark maroon named *Negress*; the others, a pleasing shade of purple-rose and a deep yellow shaded with orange, are unnamed.

ROSA INDICA ODORATISSIMA PRINCESSE JULIE D'AREMBERG (*Illustration Horticole*, plate 534).—A most beautiful and fully double Tea Rose of a clear canary yellow, shaded towards the centre with a deeper golden tint. It was raised by Messrs. Soupert and Notting, M^{me}. Berard being the seed-bearing parent. It is said to be of a fine vigorous constitution and a very free bloomer; both of which qualities, not often to be found in yellow Tea Roses, should make this newcomer a most desirable acquisition. W. E. G.

Unfair exhibiting.—No amount of exposure, I fear, as regards borrowing and lending amongst gardeners will put a stop to this practice. It has got a strong footing, and will require severe measures to get rid of it. An exhibitor with whom I am acquainted, who has taken many prizes, regularly searches the gardens in his neighbourhood for the best subjects with which to make up his exhibits, and yet men who stand aloof from exhibiting because they know that the competition is not conducted fairly are often twitted that they are afraid to meet so and so on the exhibition table. As to myself, I positively refuse to exhibit until I am placed under fair and just conditions. Honest exhibitors—and there are some—have to suffer through the misdeeds of others.—J. C. C.

—A great cause of dishonesty at exhibitions (which is by no means confined to the fruit

classes) is societies offering tempting prizes for collections. A would-be exhibitor has perhaps ten good dishes out of the twelve, and, not caring to be excluded altogether, obtains the others from his friends, quieting his conscience, I presume, by reflecting that others do the same thing. Far be it from me to say one word against exhibiting when done honestly and fairly. It engenders a healthy spirit of emulation amongst gardeners, and brings growers together in friendly rivalry. What I would like to see is a higher standard of morality amongst exhibitors. If societies would offer better prizes for single dishes and none for collections, horticulture would be benefited and we should have better shows; there would be more exhibitors, and not a quarter of the temptation to dishonesty that now exists.—W. H. DIVERS, *Ketton Hall*.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

MAY I ask you kindly to announce, in reply to numerous enquiries, that the collection this year in aid of the Pension Augmentation Fund will close on the 30th of November next. The committee are determined if possible to raise the amount of the pensions, but they do not consider it safe (and this has been frequently stated) to make this large increase of expenditure (over £400 a year) until the reserve fund has reached £20,000, thus placing beyond doubt that the annuities can always be met. I am very fearful that many of your readers are not aware that a nameless, but generous, gentleman has promised, and he spoke to me on the subject a few days ago, to give the sum of £500 provided the amount of £1750 be secured by the 31st of December next, thus making the £20,000, which, invested in 3 per cent. consols, would bring in an income of £600 per annum. By the strenuous exertions of the committee we are within a reasonable distance of attaining the desired object, but it now depends upon the gardeners themselves whether we do so or not.

To complete the sum of £20,000 we require about £120, but I regret to say that, so far as I can at present see, there is little chance of it being obtained. It is a curious fact that many gardeners and others who have been persistent in urging the increase of the pensions, and stating what they would do in the event of it taking place, will not in the slightest degree assist the committee. I am sure you will agree with me that it will be a lasting disgrace upon the liberality of the gardening profession that throughout the length and breadth of old England, where over 20,000 gardeners are employed, the paltry sum of £120 cannot be raised. True, as a rule, gardeners do not receive large wages; if they did, there would hardly be a necessity for this institution; but there are many gardeners holding good positions (and who take many prizes) to whom a trifle, say 10s. or 20s., could not and would not be an object, and if these would only combine together in one common cause, viz., to assist their distressed brethren, and sink their petty objections to this rule and that rule, the object of the committee would be easily attained, and they would have the satisfaction of knowing that they had contributed to assist in their old age many who from various circumstances had been unable to provide for themselves.

Why the gardeners withhold support to the institution, I, after an experience of forty-two years, am at a loss to understand. They are, as a rule, known to be charitable and a good and intelligent class of men, but somehow they fail to see the benefits of and to support the institution. How often has it been my unpleasant position to see a man who has lived all his time and served with fidelity and truthfulness a family; that family dies out, the estate passes into the hands of a stranger who knows nothing, and care less, for the old servant; he is discharged without a provision, and probably with little savings, and he has to apply to this institution for assistance. If he has been a subscriber for fifteen years and upwards (which, I am sorry

to say, is not a common occurrence), and he complies with the rules, he is, at the first opportunity, placed upon the list of pensioners without the slightest trouble or election, and in one year he receives back nearly all that he has paid to the institution; and, as an example, I would state that one pensioner who had subscribed eighteen years was placed on the list in 1860; he has received the sum of £384, and he is still living. Surely this is placing money to very good interest. If he has not so subscribed, he has to stand the chance of an election, and that may, and it usually does, extend over many years, and we all know the old proverb, "that hope deferred maketh the heart sick." Under these circumstances I venture to appeal to the good feeling which should, and I believe does, exist throughout the gardening community towards this institution. It now remains with the gardeners, and gardeners alone, to determine if the pensions shall be raised during the ensuing year. Gentlemen, employers of labour, and others interested in horticulture have done their part, and, as I said before, it depends upon gardeners if the comforts of their poor professional brethren in their old age and days of distress are to be increased.

One word in conclusion, and of this I am sure, that if the gardeners as a body will only show their willingness to assist the institution, there are many gentlemen who will come forward with their money and influence; and one thing is certain, that any gardener who may lend us a hand, no matter how small (for a man can only give in proportion to his means), will never regret his generosity, and will sleep none the worse for having assisted to the best of his endeavours in this work of charity. EDW. R. CUTLER.

QUESTIONS.

5263.—*Oxalis luteola*.—Will some reader of THE GARDEN kindly say if this is still in cultivation in England? and if so, a bulb of it sent to me here in exchange for something else would be welcome.—MAX LEICHTLIN, *Baden-Baden*.

5267.—*Winte ing young Cedars*.—I have some young Cedar trees which were raised from seed in pots in a stove and planted out in the ground late in spring. They are now about 3 inches high. Will any of your readers kindly inform me what should be done with them during the winter?—Q. H.

5238.—*German peat litter*.—In THE GARDEN of September 6 a correspondent mentioned having bought some German peat litter, and after bedding his horses with the litter, he made it into a bed for Vegetable Marrows, when Mushrooms sprang up in great quantities. Can any of your readers kindly say where German peat litter can be obtained, and about what the price would be?—A. C., *Isle of Man*.

5269.—*Blue Passion flower*.—I have on my house at Kensington a plant of *Passiflora corollata* which has flowered well throughout the past summer, and is now bearing a good crop of its golden egg-shaped fruits. It is a plant I admire greatly, but as its rapid growth has now covered the space originally allotted to it, I am anxious to know the best course of treatment to adopt to keep it within bounds. Should it be pruned back now or in the spring? I shall be very grateful for any practical information as to the treatment of this handsome Brazilian climber.—S. K.

5270.—*Ferns*.—Would some of your correspondents kindly tell me what would be best to do under the following circumstances? I have several young Ferns that I wish to grow on into exhibition specimens. They are growing nicely in a temperature of between 60° or 70°. They are *Adiantum formosum*, *A. magnificum*, *A. tetraphyllum*, *Blechnum occidentale*, *Woodwardia radicans*, and *Pteris scaberula*. Should I pot them into larger pots and keep them growing all winter? or shall I remove them into a cooler house and give them a rest, starting them again in the spring? A little advice on the subject will greatly oblige.—L. W.

5271.—*Fish ponds*.—Would any of your correspondents well versed in the construction of ponds and lakes inform me whether I can construct a small lake or pond and keep the water in good condition for fish and aquatics under the following conditions? First, my ground is of a fine sandy loam with a deep bed of sand and gravel. I propose to excavate to the depth of 5 feet, and then puddle the bottom and three parts of the sides with 1 foot of clay, the overflow to filter through the upper part of the sides. The pond can only be filled by the rain and also a pump, the latter to be used three or four times a week to keep the water up to its level. I have not any water in the grounds or other means of filling the pond except rain and the pump. Before commencing the affair I should like to know my chances of success or failure. Here some say I can succeed, and others that I cannot; so I venture to ask for help from those versed in such matters.—W. H. B.

ORCHIDS.

CYPRIPEDIUM CALCEOLUS.

THE bulky crowns of this Lady's Slipper, of a healthy bronzy green just cropping out of the ground and getting stouter day by day, remind one that this is the best time to transplant it. If the roots are examined, young succulent feeders may be seen pushing from the base of the crowns, and if these are carefully lifted and placed in suitable material, they will grow away naturally, and get a start before they can be ice-bound, or the buds become scale-bound. It is well known that this Orchid is not one of the easiest plants to establish, but anyone who cares to try the experiment of October planting with a healthy root that has not become shrunken through exposure will find his chances of success largely increased. There is likely, however, to be a difficulty in growing it well in the natural soil of most gardens, as they do not all suit it. We can, however, mix material and find a situation in almost any garden in which it may be made to flourish. Timely planting in a flat, deep bed of brown loam mixed with plenty of sand and a little fine peat, in a moist, but not too shady situation, may be said to embrace the main conditions under which it succeeds; but that the chances of failure may be reduced to a minimum, the teachings of repeated trials would point to sand (almost pure, but properly placed) as the surest and best kind of material to give it. In a sand bed 18 inches deep, flat, and where moisture can collect, but not remain stagnant, healthy roots have not failed to flower well for three seasons in succession. Often there have been twins and seed; but the best proof of all that the roots were in suitable material has been the increase of crowns, both from dormant eyes on the rhizome and from new growth. Some may not care to grow this or any other hardy flower under such artificial conditions; but at present we have only to do with the question of getting it to flourish in the open air. The sand should be fine and clean, and a very small portion of dusty peat will be of advantage. Put this material in a dug-out square adjoining a walk-gutter, where it will receive an extra supply of water, and plant in October. I have been in the habit of reviving roots in a bed like this which had lost their vigour from being subjected to pot-culture, also of starting dormant back pieces of rootstock. Under no circumstances is a piece of healthy root soon killed in the ground, whilst I take it that the purity and porous nature of the sand and peat are as favourable as any conditions we can set up for the growth of stout wiry roots. The orthodox "bit of sand" we are so careful to apply when setting bulbs may be profitably given to other newly planted roots, and if many vigorous herbaceous things which can hardly be said to need it were so favoured, they would be all the better for it. Clean sharp sand that has been exposed to the summer sun is most useful at the autumnal planting season. It acts like sunshine on dormant plants.

J. WOOD.

Woodville, Kirkstall.

Cypripedium Spicerianum.—Under the name of *biflorum* magnificent Mr. Adcock, of Dulwich, sends us a twin-flowered stem of this beautiful *Cypripedium*. The flowers are large, highly coloured, particularly on the exterior of the dorsal sepal. The plant from which this stem was cut is said to habitually produce twin-flowered stems.

Orchid weevils (W. J. G.).—The beetles attacking your Orchids are a species of weevil belonging to the genus *Acythopus*; they are not natives of this country; but have no doubt been imported with the Orchids. Handpicking is the best means of getting rid of them. Many of our English weevils are night feeders; if these have the same habit, search the plants with a light after dark. No insecticide applied to the plants in the usual way would kill them, as they are very tenacious of life.—G. S. S.

A few choice Orchids have been sent to us by Mr. Harvey, of Aigburth, Liverpool, among them being, a twin-flowered spike of that gem among Lady's Slippers, *Cypripedium concolor*. It has creamy yellow flowers of the same size and form as *C. niveum* produced on short stems. Another little gem in the gathering is *Odontoglossum Kramerii*, so rarely seen in flower. Mr. Har-

vey's gardener seems to be particularly successful, as the spike sent is longer than usual. This species bears a similarity to *O. citrosium*, but is even more delicate in tone. Other noteworthy specimens sent include a very fine form of *Cattleya maxima* (Backhouse's variety), remarkable for the richness of colour; also *Cattleya* or *Lælia marginata*, one of the prettiest forms of this dwarf-growing species.

Masdevallia Chimæra.—Sir Trevor Lawrence sends us from Burford Lodge an extraordinary variety of this *Masdevallia*, by far the largest we have yet seen. The flower measures across the outspread tail-like sepals just $12\frac{1}{2}$ inches. The broad portions of the sepals, which form an equilateral triangle in outline, are white, heavily barred with chocolate, particularly towards the margins, but in the centre the white ground is only spotted. The whole of the interior surfaces of the sepals is covered with hair-like papillæ. The lip forms a white and wrinkled, shell-like pouch. The flowers of this *Masdevallia* have a most grotesque appearance, and their strangeness in this respect is enhanced by the peculiar manner in which they are produced from the base of the plants.

Vanda cœrulea.—This is one of the most chaste and beautiful Orchids in cultivation. It is very liable, however, unless properly treated, to be affected with spot, which seriously detracts from its appearance, as the foliage when healthy is so dark and rich as to add considerably to its beauty. This spotting proceeds in many instances from too damp an atmosphere being maintained in proportion to the heat and light, especially during the resting season. With me this plant commences growth early in March, when it is removed to the warmest house, where the temperature maintained is from 65° to 80° , and as the season advances it ranges from 70° to 85° , and the atmospheric moisture varies from 75 to 95 per cent. It remains in this temperature till it comes into bloom in October; it is then transferred while in bloom to a house where the temperature ranges from 60° to 70° , and afterwards during the resting season from 50° to 60° , and where the atmospheric moisture ranges from 70 to 90 per cent. It is annually potted in March into rather a small pot, using Sphagnum, charcoal, and crocks. During the resting period it is never watered, unless moderately dry. Under these conditions the leaves never become spotted, and the blooms always assume an unusually deep tinge, with delicate lace-like markings on the sepals and petals.—W. C. T.

Celery maggot.—Our rows of Celery are singularly free from this pest this season, and I find that the experience of others in the west of England is identical with mine. All agree that a more favourable season for Celery in this respect could not well be. In our case, not a grub or leaf miner is to be seen. I find, however, that in the eastern and northern counties grubs are plentiful. One correspondent of mine asserts that he never saw the Celery so badly damaged by caterpillars as it is this season. This at first rather puzzled me; the question naturally arose, why should we escape the attack, seeing that grubs were plentiful enough last season? It occurred to me that the nature of our soil has had something to do with this. It is of a cold, clayey character, and naturally much affected by the heavy rains that generally fall to our lot, this being particularly heavy last winter and early in spring. This must have destroyed the pupæ which hibernated in the soil during winter; whereas in warmer soils they found an exceptionally congenial home last winter, and as a consequence an unusual number of flies emerged in May or June, these depositing the eggs from which the many grubs were hatched. I may be altogether wrong in my suppositions, but have not the slightest objection to be proved mistaken in my ideas so long as the truth is elicited. Perhaps the publication of these remarks will induce other correspondents to state their experience, and they will further oblige by describing their soil, mentioning also if the rain-

fall in their locality was heavy or not during the winter of 1883 and 1884. I might also add that we were also free of Onion maggot this season, and the life history of this with us usually troublesome pest, being very similar to the Celery maggot, there is no doubt the same causes have contributed to their destruction. It is something to be free of both pests for one season, and there being apparently none to hibernate, we may also reasonably anticipate exemption from a severe attack next season.—W. I. M.

OBITUARY.

THE death is announced of Dr. Roden, of Kidderminster, an event which took place on the 12th inst. at the age of 70 years. Dr. Roden has long been known in horticultural circles chiefly as a raiser of new Strawberries, several of which take high rank among established sorts. As a medical man Dr. Roden stood high in his profession.

LATE NOTES.

Single Dahlias.—A good selection of seedlings. No 1 is precisely similar to that received lately from Mr. Fish and Mr. Teesdale, respecting which you will find a note at page 290.

Seedling Dahlia.—I send you a seedling Dahlia saved from a semi-double of much darker colour. Would you call it a Cactus or rather one of the Juarez tribe? It is a very free bloomer.—T. C.

*. * Exactly identical with the variety which Messrs. Cannell, of Swanley, are exhibiting this season under the name of *D. picta formosissima*, which is said to be a very old variety.—ED.

Rhus radicans.—I enclose leaves of this and of *Rosa rugosa*, both of which seem well worth a place in every garden on account of their autumn colouring. *Rosa rugosa* is a mass of gold. The autumn colouring of trees and shrubs is singularly brilliant here this season.—C. M. OWEN, Knocknallan, Gorey, Ireland.

*. * The leaves of the Rose are of a bright golden yellow those of the *Rhus* yellow mottled with red.—ED.

Dry rot.—I send you a fungus, two or three of which have been found on the surface of a floor of deal which was laid down about eighteen months ago of new timber and well ventilated underneath. They have grown under a piano. Could you give any information as to what it is and what would prevent its further growth?—T. P. E.

*. * The name of the fungus sent is *Merulius lacrymans*. It is the dry rot fungus, and if the other examples are like the luxuriant one sent, they may possibly destroy all the wood in the house unless carefully removed. Its spawn can be destroyed by creosote or carbolic acid, but the pest seldom or never appears on dry wood in a dry position. It is aided in its growth by damp wood in an insufficiently ventilated place.—W. G. S.

Autumn Raspberries.—I send you a small box of autumn Raspberries which we find very useful at this time of the year. It is not, perhaps, generally known how prolific they are, or they would be oftener grown than they are. Owing probably to the fine autumn, the fruit has been exceptionally good. The soil here is heavy magnesian limestone.—G. SUMMERS, Sandbeck Park, Rotherham.

*. * The branches sent were loaded with fruit, not large, but well flavoured.—ED.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—E. M.—Please send a better specimen; the one sent is not recognisable.—*Constant Reader*.—1, *Kerria japonica* fl.-pl.; 2, *Belenium autumnale*.—*Mac*.—*Pyrethrum uliginosum*; 1, *A. longifolius*; 2, *A. horizontalis*; 3, *A. diffusus*.—*M. Scott*.—*Chrysanthemum coronarium*; coloured leaves are from *Rhus radicans*.—*Brazil*.—*Cattleya labiata*.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

Names of fruits.—S. W. S.—2, *Duchesse d'Angoulême*; other not known.—*J. Baylis*.—You do not attach numbers to your fruits.—*R. M.*—*Jacques' Early Julien*.—*G. F. T.*—1, *King of the Pippins*; 2, not known; 3, *Lemon Fippin*; 4, *Cox's Orange Pippin*.—*Reader*.—1, *Tibbet's Pearmain*; 2, *Ribston Pippin*; 3, not known; 4, *Norfolk Beaufain*.—*J. House*.—1, *Golden Noble*; 2, *Alfriston*; 3, *Beauty of Kent*; 4, *Rhode Island Greening*.—*Centurion*.—Apple not known, a very fine sort; 3, *Duchesse d'Angoulême*; 4, *Beurré Bosc*.—*Emerald*.—2, *Glou Morceau*; 3, *Charlotte de Brouwer*.—*J. Shankland*.—*Farleigh Pippin*.—*Violette*.—*Trumpington* or *Eve Apple*.—*M. B. C.*—*Pear Black Achan*.—*S. F.*—1, *Summer Strawberry*; 4, *Blenheim Orange*; others not known.—*A. C. H. O.*—Large white Apple, *Manks Codlin*; small yellow Apple, *Small's Golden Pippin*.—*M. G.*—1, *Blenheim Orange*; 2, *Nonsuch*; 3, *King of the Pippins*; 4, not known.—Others next week.

No. 676. SATURDAY, Nov. 7, 1884. Vol. XXV.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

MUSCAT GRAPES IN COOL HOUSES.

WE are now cutting thoroughly well-ripened Muscat of Alexandria Grapes that have been ripened without fire-heat; in fact, they are in houses that cannot be heated to any great extent, inasmuch as they only have one flow and return 3-inch pipe in them, and this can only be slightly warmed, owing to the long distance at which it is placed from a small boiler, and the fire has not been lighted more than a dozen days this year, and that was only to dispel damp, not to raise the temperature, and has happened since the Grapes were fit to cut. Yet people who own extensive ranges of glass, and still go in for the orthodox Muscat temperature, have acknowledged that Grapes thus produced are superior in every way to those ripened in greater heat. As regards regularity of bunch, we never had so good a set in any way when we used to keep the temperature up to what is generally supposed to be proper for Muscats, viz., 70° at night and from 80° to 90° by day. Our plan is to give plenty of air early in the day, and to shut up with all the sun-heat which we can get, i.e., as soon as its rays begin to decline; scorching after 2 p.m. need not be feared. Good late Grapes, I know, can be grown with fire-heat, but we like to keep the coal bill as low as possible, for owing to the low price of hothouse Grapes there is not much margin for profit. I send you a sample both of Muscat of Alexandria (true) and its best companion, Lady Downes Seedling, a Grape that many say cannot be grown without plenty of fire-heat.

JAMES GROOM.

Gosport, Hants.

* * The Muscats were quite ripe and excellent in flavour. The Lady Downes were not quite so good.—ED.

A FEW GOOD ASTERS.

THE term Michaelmas Daisies as applied to Asters, although now a general one denoting no sort in particular, was, we have reason to believe, originally applied to Aster Novi-Belgii, a name which may be safely taken to include almost one-third of the Asters cultivated in gardens, for, according to Dr. Gray's "New American Flora," all the forms of *lævigatus*, *formosus*, and *minimus* are comprised under Novi-Belgii, creating perhaps greater confusion than ever before existed in the history of this intricate genus. The epithet weedy has been applied to Asters, but put everything in its right place and the epithet vanishes. In the Cambridge Botanic Gardens as well as elsewhere we have seen even second-rate Asters quite at home in a mixed belt of plantation, with an undergrowth of rank Grass and low characteristically straggling bushes, leaving nothing to be desired in the way of natural effect or suitability with their surroundings. In many of the old-fashioned gardens skirting the Thames between London and Hampton Court Michaelmas Daisies may be seen growing in wild luxuriance, uncared for. In such places even second-rate Asters harmonise infinitely better with their surroundings than in a well-kept garden. Some of the larger and better sorts might, however, with advantage be planted at intervals in mixed borders, and as their sizes are as varied as their forms, some of the smaller plants of Novi-Belgii, *Reevesi*, *alpinus*, and others might stand in

the front row, *lævis* and *Novæ-Angliæ* being further back.

Amongst kinds flowering just now, and which may be planted for late effect, are the following: *A. turbinellus*, a fine, graceful habited plant, some of the smaller forms of which seldom attain more than 2 feet in height, with flowers about the size of a florin, bluish purple in colour with a prominent bright yellow disc. A variety with flowers of much the same colour as the latter is known in gardens as *A. Chapmani*, although the species to which this name correctly belongs is a wholly different plant, much taller than the typical form, which is about 5 feet, and has more distinctly stem-clasping leaves. Of *A. ericoides* there is a variety called *Reevesi*, quite a little gem for rockwork; it does not grow more than a foot high, and bears a dense head of white flowers, through which it is difficult to see either stem or leaves. *Ericoides* itself grows from 2 feet to 3 feet in height, and has very numerous flowers; they are white, about the size of a sixpence, and have a yellow disc. The leaves are very narrow, the habit spreading and free. *A. multiflorus* is much taller than the foregoing; it produces more numerous and smaller flowers, borne thickly on much branched stems. They are pure white and very compact. *Diffusus*, which grows about 2 feet in height, has its flowers crowded on horizontal stems; the petals, being narrow and white, contrast well with their bright purple discs. It has a denser habit than *ericoides* and larger leaves. *Pendulus* grows from 4 feet to 5 feet in height, and is graceful in habit. Its flowers are white. *lævis*, which grows about 5 feet high, has large bright purple, Amellus-like flowers, closely set rays, and each flower is about as large as a penny. The leaves are very narrow, half stem clasping, and lance shaped, and about half of them are always more or less withered. *Amethystinus*, unless for variety of form, is hardly desirable for small gardens, being only a diminutive-flowered *Novæ-Angliæ*. It grows from 2 feet to 6 feet in height. *Cordifolius* has numerous and very peculiar slate-coloured flowers. Its lower leaves are quite cordate, the upper inclining and lanceolate, but always keeping more or less the cordate form. It grows about 5 feet high. *Sagittifolius* is dwarfer than the foregoing and has totally different leaves. The latter are broadly lanceolate, tapering gradually to the foot-stalk, and distinctly serrated. It grows about 3 feet in height, and is suitable for a shrubby or roughrockery. *Versicolor*, including *discolor* major and minor, is a very distinct species, with flowers varying from white to purple or rose on the same plant. Its height ranges from 9 inches to 4 feet or 5 feet, leaves long and narrow, and the habit bushy. *Amellus* is a handsome autumn-flowering Aster, as is also the variety *bessarabicus*, but both are too well known to need a word said in their praise. What is called *Archer Hind's* variety seems to belong to *spectabilis*, the only difference being its later flowering habit. It has a much longer involucre than *Amellus* and entirely glabrous leaves—a wide distinction botanically. The varieties of *Novæ-Angliæ*, *roseus ruber*, *altissimus*, and others are very fine, and hard to surpass at this late season; all of them are tall growers and more suitable for isolating in woodlands than for planting in the mixed border, unless in a backward position. They range in colour from rose to deep purple, and are all very handsome. K.

Laurustinus hedges.—These form conspicuous features in gardens on the south coast; they begin to flower just when they are most needed, viz., when the falling leaves of deciduous trees indicate the end of the floral year, as far as the majority of our garden flowers are concerned. The *Laurustinus* is, however, an exception; it begins to expand its pretty heads of blossom in October and is in full bloom about Christmas, and there are then few more attractive sights than the pretty hedges of *Laurustinus* that enclose the villa gardens in this district. Hedges, I may remark, are a necessity here in order to break the force of the south-west gales that batter tender garden inmates to pieces, and for this purpose the

Laurustinus is a favourite. The usual course in forming hedges is to dig out a trench 1½ feet wide and 1 foot deep, thoroughly breaking up the bottom, and in this to plant thrifty little bushes two years old from cuttings at about 1½ feet apart. They quickly form a dense hedge, as the soil being light and strong, they form an abundance of roots in comparison with the amount of top growth. The only pruning they require consists in shortening any strong shoots with a knife during the spring months, when the flowers begin to fade and before growth commences. March or April are good months for the operation, as they get a long season of growth, and I may add that a position in full sunshine where the wood gets fully ripened is the best, in order to ensure plenty of bloom. As single specimens on Grass the *Laurustinus* is extremely beautiful, and as a shrub for cemetery decoration there are few more generally useful.—J. G., Hants.

Blackberries in South Hants.—This has been a grand season for Blackberries, and I question if in any part of England they are produced in greater quantities than here. This is partly owing to the great extent of Crown lands that are allowed to lie in a semi-wild state, and partly to the hedgerows being allowed more freedom of growth than in most agricultural counties. Brambles spring up spontaneously in the soil here, and only need letting alone to produce in due course loads of their useful fruit. The weather was hot and dry while they were in bloom, then copious rains fell to swell the berries, and again a long protracted spell of fine summer-like weather occurred during the autumn months; consequently during the whole of September and October Blackberries have been brought into south coast towns in great quantities, and realised from 3d. to 6d. per quart. The greater part of them was used for culinary purposes, and great quantities were sold for preserving. As regards the latter purpose, even in districts where there is no sale for them, they might with advantage be converted into preserves, and for jelly they are extremely well suited. Hereabouts the whole of the crop is gathered by the poor inhabitants from towns who make excursions to the country on purpose; in fact, for weeks past many have gained a livelihood by this means alone.—J. GROOM, Gosport.

PLANTS IN FLOWER.

Tuberous Begonias.—A very fine series of tuberous-rooted Begonia flowers has been sent to us by Mr. R. Owen, florist, of Yewdon, Henley-on-Thames, who states that the sorts sent are of his own raising. The flowers are remarkable for large size, symmetrical shape, and brilliant colours, though there are no new tints amongst them.

Escallonia rubra.—This is smaller than the commoner *E. macrantha*, but elegant. The flowers are reddish, loosely set on slender shoots. Mr. Stevens sends flowering twigs of it from his garden at Grasmere, Byfleet, together with *Veronica imperialis* and *Rubus roseifolius*, both now fully in bloom.

Aster spectabilis.—We saw this species in flower at Kew a few days since, and were much struck with its showiness and distinctness. It reminds one of *A. Amellus*, perhaps the best of all the Michaelmas Daisies, but it is of slenderer growth, and the colour is richer. It is one of medium height. We should include it in a selection of the best dozen Michaelmas Daisies.

Ourisla coccinea.—This little plant is brightening up the rock garden just now with its spikes of showy red flowers. Mr. Stevens sends us good spikes of it from Byfleet, where it grows well in his light soil. Some persons cannot get on with it, do what they will to coax it. It seems to delight in hugging a moist bit of soft sandstone, against which it roots freely.

Senecio pulcher.—Where this late flowering perennial succeeds well it is really a most valuable plant; it is not only showy, but different from all other open-air flowers in autumn. It is liable to be attacked in the leaves by a kind of fungus, which soon cripples the growth of the plant. It grows apparently with luxuriance in Mr. G. F. Wilson's garden, at Oakwood, Wisley, judging by some uncommonly fine flowers which he sent us among a gathering of various hardy flowers a few days since.

Schizostylis coccinea.—Again this autumn Mr. G. F. Wilson brings us some fine growths of this beautiful Chilean plant from his garden at Wisley. The specimens are, however, not quite so fine as those he brought last season, from which the plate published in THE GARDEN was drawn. This circumstance may be accounted for probably by the dry season. Other flowers sent by Mr. Wilson in good flowering condition include Gaillardias, Morina longifolia, Geum coccineum, Erica ciliaris, Snapdragons, Pentstemons, and Funkia grandiflora.

Scotch autumn flowers.—I send you a gathering of flowers, which are still in profusion here; all are cut from the open border. The Pentstemons have yielded a profusion of flowers since early in July, and though those now sent, owing to the lateness of the season, are not so fine as those I sent you formerly, they are fairly good for the season, and most effective in the beds. The long continuance of these plants in flower, coupled with the little trouble attending their cultivation and the great variety of colours and markings now existing amongst them, render the Pentstemon one of the most effective of summer and autumn-blooming plants. For a late autumn display outside, and especially for cutting purposes, perhaps no plant excels the perennial Aster, of which I send you specimens of a few of my select kinds. These plants deserve to be more generally cultivated than they are; they would be, no doubt, if the range of colours found in the various species were better known.—JOHN FORBES, *Buccleuch Nurseries, Hawick.*

* * A remarkably fine gathering for the last week in October; indeed, such a gathering would be difficult to surpass even in the south, and every specimen sent is good of its kind. Among them are the following: Early-flowering Chrysanthemums, Stocks of sorts, Pentstemons, a fine selection; Gaillardias, various kinds; Coreopsis lanceolata, Asters, the best of the Michaelmas Daisies, such as A. longifolius formosus, Amellus, and bessa-arabicus; also Lupinus polyphyllus, Rudbeckia speciosa, Helenium autumnale, and Chrysanthemum maximum.—ED.

NOTES OF THE WEEK.

Peaches on open walls at Tortworth.—Outdoor Peach culture is pursued with remarkable success at Tortworth. We have not for years seen such perfectly covered walls. The crops this year were enormous.

THE GOLD MEDAL for seedsmen at the Health Exhibition has been awarded to Messrs. James Carter & Co., High Holborn, and the silver medal to Messrs. Sutton & Sons, Reading. Silver medals have also been awarded to Messrs. Wheeler & Son, Gloucester, and to Messrs. Webb & Son, Wordsley.

Royal Botanic Society.—Meetings for 1885: Spring exhibitions, Wednesdays, March 25, April 22; gates open at 2 o'clock. Summer exhibitions, Wednesday, May 20, June 17; gates open at 2 o'clock. Evening fête, Wednesday, July 1, 8 p.m. to 12 p.m. Special exhibition of American plants by Mr. Anthony Waterer, Knap Hill, Surrey; daily during June. Promenades every Wednesday, from May 6 to July 29, excepting May 20, June 17, and July 1. Lectures at 4 p.m. Fridays, May 1 to June 19. General meetings for election of new Fellows, &c., Saturdays at 3.45. January 10, 24; February 14, 28; March 14, 28; April 11, 25; May 9, 23; June 13, 27; July 11, 25; November 14, 28; December 12. Anniversary, Monday, August 10, at 1 p.m.

Testimonial to Dr. Paterson.—In consideration of Dr. Paterson's general philanthropy, and the interest he has always taken in natural science, as instanced in the impetus he has given to horticulture in his own district, including the cultivation of Orchids and other beautiful and interesting plants, which he is at all times ready and pleased to show to the public, it is proposed to present him with a substantial testimonial, indicating the appreciation in which he is held by his numerous friends in all parts of the three kingdoms. Dr. Paterson is well known to our readers, and for the benefit of those who may wish to subscribe to this testimonial, we may mention that

the secretary's address is Mr. Robert P. McCagie, Bridge of Allan.

Mangoes.—Mr. Maries, Durbhungah, we learn, has in two years collected and made coloured illustrations of upwards of 200 distinct sorts of these useful Indian fruits. He has also formed a model plantation of them, consisting of about 65 acres, in which he has some 500 varieties. He has started a new system of nomenclature in reference to them, founded on names given to him by one of the largest growers of Mangoes in India, an old landowner. Hindustani and Persian names will be used, being, Mr. Maries thinks, more suitable than English ones, as they are generally understood there. Mango names are handed down from generation to generation. Seeds have been carefully selected with the view of improving the present race of Mangoes, and for this purpose Mr. Maries would be glad to get seeds from other countries in which the Mango is grown, together with a pencil drawing or tracing of the fruit. Seeds packed in damp soil travel well. He would, he adds, send other seeds in exchange.

ORCHIDS.

AUTUMN ORCHIDS IN AMERICA.

THE flowering seasons of Orchids seem to be much the same in the United States as here, though the difference in the climate, as regards extremes of heat and cold, no doubt influences the growth and flowering to some extent. Judging by the long list of choice species and varieties that were in bloom at the beginning of October in Mr. Corning's rich collection at Kenwood, near Albany, N.Y., we doubt if any one European collection could yield such a display. Among Phalaenopsids, which are among Mr. Corning's special favourites, there were a large number of species out, some of them of the choicest. These included P. Lowi, fasciata, Valentinei, Schroederi, violacea alba, Esmeraldae, brachyodon, besides the common P. grandiflora, amabilis, and others. In addition to these the flowering display comprised such lovely kinds as Cattleya Sanderiana, Eldorado and varieties, L. callistoglossa, which is without question one of the most magnificent of all the Lælias, numerous Aerides, and Odontoglossums. With regard to the latter, Mr. Grey, who has for many years cultivated Mr. Corning's collection so successfully, gives it as his opinion that all the hybrid Odontoglossums have a stronger tendency to flower continuously than the typical species. For example, he says O. Wilkeanum and other hybrids, such as O. Coradinei, Ruckerianum, Andersonianum, Chestertoni, all flower more than once in a year, and some as constantly as a scarlet Pelargonium, whereas the type species rarely flower more than once. No doubt Mr. Grey's experience can be corroborated by orchidists in these islands, though, perhaps, owing to the changeableness of the climate, the conditions are not so marked.

New hybrid Orchids.—Some startling new hybrid Orchids have, we learn, seen the light in the Royal Exotic Nursery, Chelsea, in the form of a splendid new Cattleya, a new hybrid Masdevallia between M. Davis and M. Veitchi, and a white-flowered variety of the popular Cyrtopodium Sedeni. Valuable as are the discovery and importations of beautiful primitive species, these hybrids are even more valuable, inasmuch as in almost every instance they possess such vigorous constitutions and free flowering propensities as render them more amenable to cultivation. When every region of the Tropics has been scoured for novelties, we shall probably watch with even keener interest than now for the results of the hybridist's industry.

Aerides Houlettianum.—This Orchid combines showiness and fragrance in a remarkable degree, and, moreover, possesses a certain amount of elegance, always a telling point in an Orchid. The flowers, produced in long pendulous spikes, possess those quiet harmonious tints which always captivate the refined. The labellum and its horn-like spur are of a soft fawn tint inclining to prim-

rose, while the sepals are tipped with rose-pink. These, set on graceful spikes drooping from the rich green of the tall tiers of foliage, produce a charming effect, which is enhanced by the delightful fragrance of the flowers. It is deservedly becoming popular, being imported rather plentifully, and it seems to be a plant of easy culture. It is now one of the chief objects of interest in the East Indian Orchid houses at the Royal Exotic Nursery, Chelsea.

Lælia elegans Turneri.—We had not a clear idea of what Turner's variety of Lælia elegans was until we saw, the other day, a magnificent spike of it carrying five flowers, sent by Sir Trevor Lawrence from his garden at Burford Lodge, Dorking. The genuine variety, which this was, is indeed a splendid Orchid, and it is not surprising that orchidists pay high prices for even small plants of it. The flower is larger than an ordinary form of the typical L. elegans, and the sepals and lips are broader and of more substantial texture. The sepals are of a rich, vinous purple, shining as if varnished; the labellum measures 1½ inches across the lobe, which is of the most glowing tint of amethyst imaginable, the richness of which is intensified by the pale, almost white throat. We consider this one of the loveliest of Orchids in cultivation, the harmony of colour being more pleasing than the strong contrast of the white sepals and amethyst lips of the white variety of L. elegans.

Orchids in room windows.—In the early part of the present week a friend called here and invited me to see his Orchids—exotic Orchids, he said—growing in an ordinary bay-window, and without artificial heat. After reading in your columns the treatment to which this class of plants is usually subjected, I assure you I was by no means prepared for the treat in store. On entering the room, the first plant to attract my attention was a fine specimen of Lælia Dayana growing on a block of wood suspended from the window-sill. This plant, which was in full flower and had been so, my friend said, for the past three weeks, took my fancy immensely, not only from the natural way in which it was growing, but beauty of flower, which shed quite a halo of delight around the room. Amongst others in excellent health were Odontoglossum odoratum, Maxillaria leptosepala, M. nigrescens, and M. venusta, Lycaste aromatica and L. Deppei, Dendrobium nobile, Oncidium ornithorhynchum and O. prætectum, Angreum falcatum, and others. Several of these were in flower, notably Odontoglossum odoratum, Dendrobium nobile, Oncidium ornithorhynchum, and Angreum falcatum. The window had a north-western aspect, and was well supplied with light. If exotic Orchids can thus be successfully cultivated in an ordinary sitting-room window (a fact that I was not before aware of), what an amount of pleasure and delight will be in store for the lovers of these plants who cannot afford them the glass structure and methodical treatment usually recommended.—A. D. W., *Bangor.*

SHORT NOTES.—ORCHIDS.

Cyrtopodium Godefroyæ.—We hear that this new Lady's Slipper, about which so much has been written, is now flowering in Mr. Lee's garden at Downside, Leatherhead. It is described as a most beautiful species, different from all others, and one that will be admired by everyone besides enthusiasts in Orchids.

Vanda Sanderiana var.—Sir Trevor Lawrence sends us an eight-flowered spike of this new Orchid, having flowers of a much deeper tint of rose than those which we have hitherto seen. Indeed, all the colours seem more pronounced than usual. Accompanying this was an enormous flower of Phalaenopsis amabilis, the diameter of which was just 4 inches, while the breadth of the lateral sepals was exactly 2½ inches. We have not seen or heard of a larger flowered variety than this, and it is probably unique.

Cyrtopodium Lawrenceanum.—A very fine twin-flowered spike of this noble Lady's Slipper has been sent to us by Mr. Macdonald, Woodlands House, Perth, but probably it is only an accidental occurrence. Accompanying it is a spike of Ptiluma nobilis, a major variety of P. fragrans, a chastely beautiful and deliciously fragrant Orchid, which we should recommend for even a small selection. It is a continuous flowerer, and is by no means difficult to grow successfully.

TREES AND SHRUBS.

SPECIMEN TREES AND SHRUBS.

If cultivators had only spent a little of the time in producing good outdoor specimens of shrubs and trees that has in times past been spent in growing formal and distorted specimens of greenhouse and stove plants, &c., many of our gardens would have presented a different aspect from what they do at this time. The extension of glass in gardens for plant culture has not been an unmixed good, because it has doubtless distracted attention from objects of culture out-of-doors equally or even more worthy of care than those under glass. We can recall many specimens of indoor plants, that have been the chief hobby of those who had the care of them for nearly the whole of their horticultural lifetime, in places where perhaps not a single example of outdoor special culture was to be found. Bedding out also helped to drive other phases of gardening out of peoples' minds, and hence the general complaint now is that shrub and tree culture has been neglected to a degree quite incompatible with other phases of gardening. These reflections occurred to me not long since when going through the reserve grounds of a noted nursery, where fine old specimens of many of the best shrubs kept in stock grew, consisting of named varieties of Rhododendrons, Azaleas, Golden Yews, Hollies, and other shrubs. I was particularly struck with the two first species of shrubs, as many of them were of large size as well as symmetrical in shape, although not formal. Each plant had room, of course, to grow and show itself; only being in beds or quarters, they did not look as well as they would have done on a garden lawn or terrace. We are too prone in gardens to mixing shrubs up too much, leaving each subject to struggle for existence as it may, and what I wish to suggest is the growing of single specimens of the best types here and there in suitable situations, or on walls where the shelter of these is needed. What, for example, could form a finer floral object than a large Rhododendron or Azalea bush, perhaps 10 feet or 12 feet high, more though, and covered with bloom in every part, as the plants referred to in the nursery were when I saw them?

Rhododendrons in good loam or peat grow amazingly fast, especially if they have room, because it is all they want to make them grow dense and symmetrical down to the ground. There would be no objection to putting several of the same sort together to make a specimen quickly, and which they readily do in that way. One of the Ghent Azaleas which I saw in the nursery was as good in its way as the pretty greenhouse Rhododendron jasminiflorum, and far better flowered, while it was as large as a bush Apple tree. But scarcely any of the ornamental shrubs come amiss for the purpose, as in good soil and with the necessary room all grow more or less symmetrically. I speak now of single specimens of select subjects grown on the lawn or where they can be seen singly. The *Pyrus Malus floribunda*, for example, is a fine subject for the purpose; also the common *Fuchsia* (near the seaside), *Euonymus*, *Veronica*, *Lilacs*, *Weigelas*, *Pyracantha*, *Laburnum*, *Deutzia*, *Brooms*, *Spiræas*, and many others both deciduous and evergreen. Not a few also lend themselves to wall culture exceedingly well, and in two or three years rise up into fine specimens if rightly pruned and trained. Some of the best for this purpose are the *Cotoneasters*, *Pyracantha*, *Forsthia suspensa*, *Pyrus japonica*, *P. Malus floribunda*, *Weigela*, *Hibiscus*, *Ampelopsis*, *Ivies*, *double Peach*, *Prunus*, and *Cherries*, and, indeed, all the free-growing and branching shrubs, which, when trained as carefully and methodically as one would do a Peach or a Pear tree, make far handsomer specimens at least than these do.

Hitherto wall shrubs have been greatly neglected in culture, being generally nailed up just as they happen to grow, being most accommodating in that respect. For my part, whether in leaf or in flower, I do not know of a prettier plant than a well-trained *Pyrus japonica*, or of any kind of shrub that can be sooner trained into the natural

fan shape on a wall. The only point is to give each plant the room it requires and let it grow.

S.

SMALLER FLOWERED MOCK ORANGES.

THE two varieties of these charming, free-blooming, and usually fragrant shrubs are not by any means as well known in our gardens as they certainly deserve to be. The larger flowered of the two, viz., *Philadelphus hirsutus*, so named from its hairy under-leaf, I have only met with in the botanic garden belonging to Trinity College in Dublin, where I was much struck by the compactness of its habit of growth, and the charming wreaths of its pure white flowers, each surrounded by its whorl of leaves, and produced with great freedom all along the slender shoots, and branchlets so well portrayed in the accompanying woodcut (p. 375). About fifty-five varieties of this family are known to European gardens, and were a few years ago all to be seen in cultivation in the splendid arboretum of the late M. Alphonse Lavallée, at Segrez, in France. *P. hirsutus* approaches nearest, as far as I know, in size of bloom to the Japanese



Flower-spray of *Philadelphus microphyllus*
(natural size).

variety, *P. Satsumanni*, but the blooms of this latter are produced in small racemes of from three to four flowers on each. *P. microphyllus* is the smallest flowered, as well as the smallest leaved, of the family, and came to me in the autumn of last year from Messrs. Woolson, of Passaic, New Jersey, U.S.A. It bloomed copiously in my shrubbery in the early summer of this year. It is an exceedingly pretty and very sweet scented little shrub, and from its dwarf and very slender habit of growth would be well adapted for the decoration of a rock garden.

W. E. G.

CONIFERS AT THE GRANGE, KINGSTON.

THE founder of the fine collection of Conifers to be found here spared neither time nor expense in forming it, nor in its after management so long as he was the owner of it. The ground is naturally deep and good, but notwithstanding this it was deeply trenched, and liberal supplies of farmyard manure were incorporated with it; besides this the trees were annually mulched with rich manure, and their condition shows that such treatment suited them, though very different from that to which Conifers are generally subjected. There are some who maintain that manure of any kind is injurious to this class of trees; it is thought to make

the growth tender and susceptible of frost; but that cannot be correct, for none of the trees here have suffered from it, though in the winter of 1869 and 1870 the thermometer at Taunton, only four miles from The Grange, went down to 1° below zero. I hardly know in which I was interested the most—the great variety of sorts or the noble proportions that some of the specimens have attained. There are enough of both to interest any lover of trees. Of *Thuja Lobbi*, two fine specimens stand on the lawn near the house. They are dense in growth and perfect in outline; they are about 35 feet high and 25 yards in circumference. Several fine *Araucarias* reach a height of more than 40 feet, a female variety amongst them bearing cones. A remarkable variety of the male stands out boldly, and is densely clothed with branches. *Pinus insignis* has been freely planted, and justifies the partiality that has been shown it by growing vigorously and maintaining its fine, bright green colour. *Picea nobilis* in this part of the ground is a tree 60 feet high and in excellent health. Of *Cupressus macrocarpa* there are many examples, and in better condition than that in which they are usually found. *Cupressus Lawsoniana* is represented by a specimen of singular beauty; its growth is dense and the outline perfect. *Abies orientalis* is a handsome tree, as is also the Hemlock Spruce. *A. Douglasi*, as seen in different parts of the grounds, fully sustains its character, for it is a truly handsome tree. *Picea nobilis* and *P. Pinsapo* must have been some of the earliest planted, for both are noble specimens of these kinds. *P. amabilis* is also becoming a grand tree; its striking character appears to increase with its age, as does also that of *P. Nordmanniana*. A fine plant of *Cryptomeria elegans* is now fast assuming its winter colouring. *Retinospora plumosa* forms a good companion to it. Its light feathery growth and distinct shades of colour render it quite conspicuous. The dwarf form of *Abies excelsa* is represented by a capital plant about 5 feet high, with a corresponding diameter. The growth is so closely set and the plant in such perfect health, that one can hardly realise how it can remain such a pigmy surrounded as it is by so many trees of noble stature. By the side of a stream which skirts one part of the grounds several varieties of Bamboos have got thoroughly established. The sort named *Metake* has grown into a huge bush 10 feet high and several yards in circumference, and associated with them is a fine plant of the green-leaved *Aralia*. It will, therefore, be seen that there is sufficient here to please a wide range of tastes.

J. C. C.

Autumn leaves.—Hardly anybody who is interested can have failed to notice the brilliant colouring of the Sumachs and Liquidambar in the year now waning. Amateurs with the smallest of shrubberies should never be without *Rhus Cotinus* and *laciniata*, if it were only for their gorgeous autumn tints. People are very apt to say, having but a darkened recollection of foregone falls, that the present natural beauties are the finest they have ever seen. There is, however, some reason this year for such assertions. *Æolus* has kept the winds tied up till the last day or two, and the leaves have fallen silent as snowflakes.—C. A. M. CARMICHAEL.

The Golden Chestnut at Tortworth.—This beautiful evergreen tree, a native of the Pacific coast of N. America, we had this week the pleasure to see, in fine vigour in Lord Ducie's grounds at Tortworth. It is usually a very stunted thing; here it seemed as free as any hardy evergreen, and showed well the soft russet gold of the underside of the leaf. It is probable that the stunted character of most of the specimens of this precious evergreen we see is owing to their being at first coddled in pots or grafted. The brown-gold hue of the under side of the leaf is lovelier than usual when the foliage is moved by high winds. We remember the same charming peculiarity in one of the Evergreen Oaks we saw in California. Few men have planted with more vigour and taste than Lord Ducie, and it must be gratifying to him to succeed so well with the

Golden Chestnut, and to help others to a better knowledge of what for many years has been an object of great interest to those knowing and caring for choice trees. Its fate in our country may seem uncertain. We have no doubt that it will thrive better than many Conifers which have been extensively planted, and that it will some day adorn many an English lawn in the south and western counties if not elsewhere. It would hasten that day if we could get fresh seeds, and sow them where we wished the trees to grow. Oaks are impatient of being pulled about when young.—*Field*.

Fraxinus aucubæfolia.—There are several kinds of variegated Ash, but this is the most effective of any that have come under my observation. It is a form of the American Ash (*Fraxinus americana*), in which the leaves are distinctly blotched with yellow after the manner of the oldest type of the Aucuba. It sustained no injury from the hot, scorching weather which we experienced last summer; on the contrary, exposure to full sunshine seemed to render its variegation still more distinct. The American Ashes have mostly much larger leaflets than are to be found in the European species, and to this rule the variegated kind under notice forms no exception.—*ALPHA*.

Wasps and Elm trees.—At Aswarby of late years wasps have been very destructive to Elm trees, and how to prevent them being so puzzled me for a long time until the thought struck me that they might be destroyed on Elm trees just as in their nests. For a number of years I have used for killing wasps cyanide of potassium, a deadly poison, a few grains of which are sufficient to destroy human life. I buy a shilling's worth at a time from our chemist; half of this quantity I put into a pint bottle and fill up with cold water; I then take a fine-haired painter's brush, dip it in the liquid, and well paint the parts of the trees affected by the wasps. This soon drives them away, never to return—at least such is my experience of it here on trees from twenty to sixty years of age. When not in use the bottle must be securely corked and kept under lock and key. Within a radius of half a mile I have this season destroyed forty-eight wasps' nests.—*RICHARD NISBET*.

The Golden Ash.—Being a few days in the park of Highnam, near Gloucester, we had the pleasure of seeing the beauty of this tree to greater advantage than it is commonly seen. The effect of the foliage was that of a cloud of clear lemon, very distinct from any other tree. The tree was planted in the open park by Mr. Gambier Parry, and thus acquired a size which it often fails to do in the common shrubbery. The stems are yellow, and the black buds contrast richly with them. Here is a case in which a variety of a well-known tree presents a striking difference in foliage from that of the common kind without being a variegation. It would be difficult to say too much in favour of it. It is one of the things which would well repay for planting in groups where good effects of foliage were desired. Mr. Gambier Parry, who has planted so extensively, and with such taste and knowledge as is rarely displayed in planting, has few trees in his richly stored pinetum and park more deserving of a place in our ornamental plantations. Our woods have rarely been seen so beautiful as this fall. In several parks and woods unusually rich in colour we saw nothing more valuable than this form of a common native tree.

Ivy on trees.—I never remember to have seen Ivy so full of bloom as this year. In this district every twig terminates in a head of bloom, literally smothering the plants with flowers, which harmonise well with the lustrous foliage. Ivy-clad walls are charming, but they give only a feeble idea of the beauty and ornamental character of this fine Evergreen. Several years ago some large Elms, the trunks and main branches of which were covered with Ivy, were topped and the branches shortened—an operation which gave the Ivy an opportunity of developing into bushy masses,

forming irregular columns of verdure more than 40 feet high and loaded with bloom from top to bottom—the finest things of the kind I have seen this year. Ivy grows with freedom in dense shade, but it neither flowers nor fruits there, and it will not assume a bush-like form unless upward progress is stayed. Those who have many trees on which Ivy is growing freely would do well to head one or two of them back, both top and side branches. They look ugly for a time, but the Ivy soon relieves them from all appearance of deformity, and when the foliage drops in autumn there is the never-changing, ever-verdant Ivy for the eye to rest upon. A few trees clothed in this way scattered about a wood are pleasant to look upon when the summer's verdure is past. Some say that Ivy is injurious to trees; no doubt it robs the soil of a good deal of nourishment; otherwise, when trees have become large, I doubt if it affects them much. No one would, of course, think of allowing it to fasten on young trees. In my case a tree or two sacrificed to it is amply repaid.—*J. C. B.*

Clipping in gardens.—We met a poor fellow the other day with his arm in bandages, which, he told us, arose from a painful infliction, the result of six weeks' clipping of hedges in a garden. Among the many objections we have urged to clipping, we had not previously mentioned this. We do not now speak of the clipping to keep hedges in order, such as is necessary on the farm, but of the clipping of choice Evergreens in formal gardens, such as may be seen in Elvaston and some other places, old and new. In very old gardens in which clipped hedges form a feature we would preserve them, but in a modern garden clipping is worse than ridiculous. When this ancient phase of gardening arose in Europe there were very few Evergreens obtainable, and it was occasionally desirable to clip for certain reasons; but now-a-days almost every type of habit or degree of size that one might desire can be obtained. Therefore, we say, clip nothing whatever in the modern garden. If things are too thick, pull them out of each other's way; and if they are too high, plant dwarfier ones. There is no position for which suitable things cannot be found. In the very gardens where this waste of labour goes on there is often not enough help for the necessary cropping or other work of the place.—*Field*.

SHORT NOTES.—TREES AND SHRUBS.

Parrotia persica has been in this country upwards of forty years. When first introduced it was kept in a greenhouse, but it has proved to be quite hardy. The beauty of its foliage can scarcely be so well known as it should be, or it would find a place in every collection of trees and shrubs where varied and richly coloured foliage is admired. The leaves change from pale green to red and gold. It succeeds in any good soil.—*W. O. Fota, Cork*.

Sax. Buckthorn.—It is stated (p. 253) that the Sea Buckthorn (*Hippophæ rhamnoides*) is essentially a seaside shrub. It is by no means exclusively so. It is common in many parts of the Continent far from the sea; for instance, I have seen it in profusion and very vigorous near Innsbruck, the nearest sea to which is the Adriatic, distant in a direct line at least 130 miles.—*J. JENNER WEIR, Chirbury, Coper's Cope Road, Beckenham*.

Erica codonodes.—I find this to be tolerably hardy; but that it will not bear a severe winter in an exposed position I had ample proof in the winter of 1879-80, when plants of it that had grown 4 feet high were terribly crippled, and in the next winter, which was equally severe, they were killed outright. I have, however, lately seen it in a garden near here growing vigorously in a sheltered border, where it has stood many years.—*J. C. C.*

Autumn tints.—The great preponderance of reds in the fading foliage is very marked hereabouts this year. Several trees which usually go off clad in yellows and browns are now most brilliant, and the Brambles, some of the fruit of which is of very large size and most abundant, are marvellous combinations of colour. If the present glorious weather is not interrupted for a week or two longer, the woodland landscape bids fair to be one of the most gorgeous in living memory.—*J. M., Charmouth*.

—Can any reader of THE GARDEN explain why the foliage of some of my Guelder Roses turns a very fine colour now, while others remain green till it falls? Those that turn at all are a finer colour than any of the other trees and shrubs which I grow for that purpose, including scarlet Oaks, Liquidambar, Mespilus, Cherries, &c. All the Guelder Roses appear to be in similar situations. Are there two varieties?—*H. E. B., Yarmouth*.

What to plant.—Mr. Baines gives (p. 356) the practical advice which one would expect from him when he recommends the Mount Atlas Cedar to be planted in preference to the Deodar and Sequoia (*Taxodium*) sempervirens in preference to the Wellingtonia. His remarks respecting these two trees are unquestionably true. But Wellingtonias and Deodars are notorious trees, and planters of little experience or none are apt to fall into the common error of assuming their adaptability for all soils and situations. They, in common with other Conifers of comparatively recent introduction, have now been long enough in this country to have been well scrutinised, and those that have come satisfactorily through the ordeal Mr. Baines points out, with the important exception of Thuja Lobbi. "When in doubt plant a Lobb" is a maxim of two or three of the authorities. Like most terse and bluff statements, it requires dilution, but is substantially true. I have lately had good opportunities of fixing or changing opinions, having journeyed horticulturally-minded from the Yorkshire limestone to the Cornish granite, and my predisposition in favour of Thuja Lobbi has been increased. Whether the soil be deep or shallow, whether the position be bleak or sheltered, it appears to thrive and grow fast and keep vivid. There is a specimen of it at Penjerrick, in Cornwall, 76 feet high, with every branch perfect from the ground to the leader. No Conifer ever impressed me so much as this one. It has elevated itself above the surrounding shelter, and has apparently suffered no harm. Cornwall is not England, it is true, but there are numberless fine trees of it in East Anglia and Yorkshire. The timber is very durable, and for telegraph poles, &c., would be as good as Larch. Mr. Baines, too, might have coupled *Athrotaxis selaginoides* with *Thujopsis dolabrata* for the purposes he advocates therewith. Before leaving this subject I should like to say that the glaucous form of *Cedrus atlantica* must be to most minds handsomer than the Deodar; and many, too, must prefer the irregular growth of *Taxodium sempervirens* to the monotonous sugar-cone shape of the Wellingtonias. The *Taxodium*, too, is a tree which is often benefited and made more effective by cutting off its lower branches and exposing its curious umber-coloured bark.—*C. A. M. CARMICHAEL, Arden House, Henley-in-Arden*.

FERNS.

SOME GOOD HARDY FERNS.

A GARDEN can scarcely be said to be well furnished unless it contains a few hardy Ferns, which fill up dark corners and similar places most effectively. Free use should also be made of some of the strong-growing kinds in shrubbery borders. How very pretty large spreading plants of the common Male Fern look rising from amongst low-growing shrubs or nestling amongst those of larger dimensions! By the edge of water, too, what looks finer than a colony of Ferns, especially when associated with the common Flag Iris and other moisture-loving plants? The following are a few of the best of the many species of hardy Ferns now in cultivation:—

LASTREA FILIX-MAS CRISTATA.—This is a handsome tasselled form of the common Male Fern, and one of the noblest habited of all the hardy kinds. The fronds, which are rich green in colour, attain under good cultivation a length of nearly 3 feet. This is a well-known Fern, but it is not nearly so much grown as it might be. Being quite as hardy and vigorous as the typical form, it is capable of holding its own when growing amongst rank herbage, and is therefore suitable for the wild garden or water margins.

ATHYRIUM FILIX-FEMINA FIELDENI.—A very pretty form of the Lady Fern, having tasselled fronds thickly set together. It is tolerably vigorous, and attains considerable proportions in a cool shady position and in free soil having plenty of organic matter in it. A dry parching atmosphere causes the fronds to turn yellow. Of the

many varieties of the Lady Fern this is one of the very best. There is another variety called Frazelli having the pinnae much contracted; it is, in my opinion, more curious than beautiful, but has the merit of being quite distinct. The red-stemmed Lady Fern is a very ornamental kind; it is rather more robust than the type, and the stems, being strongly tinged with red, it has a distinct and ornamental appearance.

tenderest green. This Fern likes good food and plenty of it, not objecting to a little rotten manure in the soil, and in the case of established plants, an annual top-dressing of the same. Treated generously, a small plant soon develops into a handsome specimen. Unfortunately, it is quite barren, never in my experience producing spores, which may account for its not being so frequently met with as one might naturally sup-

being cut and notched in a charmingly irregular manner. They arch, too, very gracefully, spreading one over the other, forming dense tufts of tender green. There is one peculiarity about this Polypody worth mentioning; it is the latest of all the hardy Ferns to grow, strange to say, not starting into growth before other kinds have formed their fronds. It is only by late autumn that these are matured, and unless the weather should be very severe they last fresh and green all through the winter. It is quite barren. This Fern, like the type, will do well where many other Ferns would perish, and is a capital plant for dry banks, being quite happy in the full sun, doing best, however, where it gets plenty of light and the sun for an hour or two during the day. It must on no account be planted in dense shade, or it loses its sturdy character and looks weak and drawn. Grown in pots, it would be excellent for cold greenhouse corridors, &c., in winter.

POLYSTICHUM ANGULARE PROLIFERUM.—A much-divided form of the common angulare, growing some 2 feet high. It is one of the prettiest of hardy Ferns, being very indifferent as to soil. Little bulbets form on the base of leaf-stalks, and if taken off and inserted in sandy soil they make plants.

POLYSTICHUM ACULEATUM.—A more robust plant than the preceding, and having a fine appearance when doing well. Likes plenty of moisture at the roots and a cool atmosphere. Seems to require shade more than most kinds.

OSMUNDA REGALIS.—This must be included in any list of good hardy Ferns; it is the noblest and most ornamental of them all. If any of your readers want to see this Fern at its best, give it a cartload of good loam and leaf-mould, and there will be something worth looking at in the course of a year or two, that is if strong plants are set out. I have known this Fern to make fronds 7 feet long, but they were on an old specimen that had an unlimited root run. Choose, if possible, a moist situation; near a water margin is a good place. There are several tolerably distinct varieties of the Royal Fern, of which interrupta and cinnamomea are about the best.

ASPLENIUM VIRIDE.—This is a little gem amongst hardy Ferns, one of the smallest forming little tufts of foliage not more than a few inches high and of the loveliest green possible. Unfortunately, this Fern is just a little hard to please, sometimes refusing to respond to the care bestowed on it, at others thriving as well as could be wished. The best plant I ever had was on a stumpy close to the edge of it, where the drainage was exceptionally good, and where it got plenty of light and a little sun in the morning. Very free drainage, with a good depth of loam material for the roots to go into, seem to be the principal points in the culture of this charming little Fern.

STRUTHIOPTERIS GERMANICA is not, as the specific name indicates, a native, but is quite hardy. In the course of time it forms a stem 6 inches or more in height, which carry a plume-like crown of fronds. Grown in light soil, it forms numerous rhizomes from which young plants spring, thus forming colonies in varying stages of development.

CYRTOMIUM FALCATUM.—This is a native of Japan, and although not quite so hardy as could be desired, is so handsome and totally distinct from all outdoor Ferns, that I cannot pass it by. The fronds attain a length of about 2 feet, and are of extraordinary substance, and in depth of verdure are not approached by any other hardy, and by very few, if any, indoor Ferns. The pinnae are pointed and prickly, and I should think a good name for it would be the Japan Holly Fern. It seems to bear about 18° of frost very well, but more than this destroys the crown. In very hard weather it can easily be preserved by cutting off the fronds, covering the crown with dry material, inverting a flower-pot over that to keep it in place. It is really worth this trouble, as it affords such complete variety. It is an ever green kind.



Philadelphus hirsutus (natural size). See p. 373

SCOLOPENDRIUM VULGARE CRISPUM.—One of the very finest Ferns in cultivation, and where six kinds are grown this should form one of them. The fronds are regularly and beautifully crisped their whole length, are pale green, and numerous produced, forming bushes of foliage in the case of well-established specimens almost 3 feet across and 18 inches high. This variety affords a fine contrast to the type, the one having fronds of the richest hue imaginable, the other being of the

pose it would be. By planting in good soil, however, so as to promote luxuriance, a stock of it may soon be worked up. It is a fine kind for pot culture, being much favoured by exhibitors, and if sheltered under a glass roof will retain its foliage through the winter.

POLYPODIUM VULGARE CAMBRICUM.—No hardy Fern known to me can excel this in elegance of growth. The fronds are broader and paler in colour than the common kind, the pinnae

ADIANTUM PEDATUM.—Here we have another exotic species, but hailing from North America, and therefore hardy with us. It requires a rather elevated position to keep the crowns dry in winter and a light soil. Then it grows in good tufts 2 feet or more across, and is very attractive, which it cannot be said to be when only doing moderately well. Like the preceding, it is fine for pot culture for cool or cold greenhouses. It is all the better for a little peat in the compost with some pounded brick rubble.

ONOCLEA SENSIBILIS.—Also an exotic, but very hardy. It forms a creeping rhizome, from which the very pale green delicate-looking leaves issue singly. They are of peculiar shape, reminding one so forcibly of those of the Oak, that I am surprised it should not have been named *quercifolia*. I call it the Japan Oak-leaf Fern, and I do not think a better name could be found for it. It likes a free light soil, which it soon occupies with its creeping stems, extending in this way considerably in the course of a year or two. With one exception, the above list contains only kinds of the easiest culture. They are by no means fastidious as to soil, growing freely enough in such as is naturally of a free description. Garden refuse thoroughly rotted is excellent material, mixing with it some loam or some ordinary garden soil. As a rule, these free-flowering kinds do not get all the food they require, and it is astonishing how they thrive with really generous treatment. When they have been a year or two established, a top-dressing of quite rotten manure does a large amount of good. J. C. B.

KITCHEN GARDEN.

USE OF ANIMAL MANURE IN GARDENS.

I NOTICE IN THE GARDEN several communications from correspondents on the use of animal manure for flowers, fruits, vegetables, &c. I therefore venture to give you my experience of about fifteen years. My strict orders have been that no animal manure is to be used in the kitchen garden or elsewhere. Leaves, kitchen refuse, sifted cinders, and lime are used, and burnt rubbish. The ground is trenched every other year about 2 feet deep. The garden slopes to the south-west, a stiff, clay soil, but well drained. The usual practice with Seakale is to cover it with earthenware pots, and load the plants with manure. For many years I have given up the pots, and cover the plants with sifted ash a week before Christmas. The plants are planted in good earth, but no manure or dressing of any kind is given; with this system I get the very best results. The ash is removed at the proper time, and compact heads of Seakale are cut from 5 inches to 7 inches long, white, and with the most delicate sweet flavour, perfect, and fit to be eaten. With Asparagus I use nearly the same system. The seed is sown in beds, well dug, but no manure or dressing. The third year the Asparagus is fit to cut, but only about 6 inches of the all green part is ever used; this is tender and well flavoured, and can all be eaten. A relation of mine spent £16 for manure for two Asparagus beds, determined to have large Asparagus; he had large Asparagus, but spoilt in flavour by the foul juices of the manure. The same system is adopted with Peas. I only use two sorts, *Ne Plus Ultra* and *Veitch's Perfection*; no manure is used, but plenty of lime. The Peas are large and excellent. With Celery, Carrots, Onions, Beans, Cauliflower, Cabbage, the same plan is adopted, ground well trenched, but no manure, and I have, I consider, perfect vegetables, not large in size, rather small, but sweet, healthy, delicious—all that a reasonable man could desire. With Vegetable Marrows and Cucumbers I adopt the same system, and these generally are considered unprofitable to grow without plenty of manure. Marrows are first raised in pots, then planted out under a handglass in a good mound of earth. In about a fortnight the glass is removed, and they are left to grow naturally; if the weather is dry, water must be freely given. I have a thorough dislike for the ordinary grown Marrows—great,

large, tasteless, watery vegetables; but grown on my plan I get as nice a vegetable as can be eaten, sweet and firm in the flesh, about 9 inches long, rarely longer, very different from the gigantic 2-foot Marrows generally grown. Cucumbers are grown in a frame filled with good earth, no heating materials of any kind, and I get the best flavoured Cucumbers about 10 inches long, very different from the great 2-foot Cucumbers grown at "express speed," which, as far as I have tasted, have every flavour but the right one. No manure has ever been placed on my Strawberry, Raspberry, or Rhubarb beds, and I get them as fine as I could desire. Of Tomatoes this year I have a most satisfactory crop, all grown in the open air, planted in earth without any dressing.

I am quite aware that the system of gardening I adopt would not do for market gardeners, or even for the gardens attached to large mansions, or for the purpose of exhibition. In these cases, quantity and size appear the chief matters aimed at; the pocket and the eye must be satisfied; but surely this should not be the first consideration. The chief point I consider to be a healthy and well flavoured vegetable of moderate size, and this you cannot obtain if you charge the ground with gross animal manure. If I recollect rightly, even the editor of THE GARDEN himself once admitted that some of the large Asparagus he so much praised for size and appearance had rather a queer taste. I am not certain of the exact words, but I believe I express the meaning of his words; and not long since I was in a large market garden, and I saw Rhubarb and Seakale covered in coarse manure, and I said to the owner, "Why, surely you do not eat Rhubarb grown in this manure?" "Oh, no," was his reply; "this is for the market. I have a little patch of Rhubarb grown in simple earth for myself."

As to the digging and dressing herbaceous borders and shrubberies with manure, I consider it an act of the greatest possible folly, and never adopt it, and never did adopt that greatest of all gardening errors, bedding out. In the conservatory and greenhouse only good earth and peat-earth is used, and I have both outdoor and in as good a display of flowers all the year round as need be desired. X. Y.

Decon.

Autumn planting Potatoes.—If anyone feels disposed to try this experiment—for to most people it would be an experiment—I would advise its being done at once while the ground is dry and friable. Where the soil always lies loose and porous the tubers can take no harm; but in cold, clay soils that are very retentive of moisture, and consequently get exceedingly run or close in wet seasons and much affected by frost in hard winters, I should say that it was folly to attempt the experiment. If, however, in such case anyone is disposed to try, let him take out trenches 9 inches in depth, place in the bottom of each some 3 inches in thickness of long stable manure, and then placing the tubers on that add a little short manure over them, finally adding some 6 inches of soil, which may lie over the rows in a ridged form. To admit of the free passage of surface water, the furrows between should be forked up roughly. In the spring the tops of the ridges may with advantage be drawn off with a coarse rake, and the growth would find in the soil little or no obstruction to its development. As to beneficial results that may flow from autumn planting, I hold these to be very problematical. No matter what soil or position may be planted, I am certain that good, sound seed, properly stored and carefully planted at the end of March or beginning of April, will always give as good results and probably better. The notion that self-planted Potatoes are both more prolific and precocious than are spring-planted ones is erroneous, as I have often proved. The tubers lying in the soil all the winter, even if they escape frost, are exposed to the depredations of mice, wireworms, and grubs, and many may thus be destroyed. That the practice of spring planting is so universal tells much in its favour, although not everything, because practice is not always

consistent with Nature. Still, the matter is one easily decided upon by all who garden, and if they wish to experimentalise they should set about it at once.—D.

ROSE GARDEN.

PROPAGATING ROSES.

DWARF Roses on their own roots are, I believe, generally preferred to those that are worked on any kind of stock, as not only do they very frequently grow more vigorously, but they also remain in good health for a greater length of time. On our heavy soil, Roses on the Manetti stock especially are very apt to gradually produce weakly growth, and to die back in an unaccountable manner, this happening in spite of their being planted sufficiently deep to ensure the plant emitting strong roots above the point of union of stock and scion. We have at different times planted a considerable number of worked Roses, but as a rule, fully 20 per cent. fail to start into growth properly, and an uneven bed is the result. This never happens with those which we have recently struck. These plants continue to throw up strong shoots or suckers, and it is owing to this good habit that superior robustness is maintained, as any not too succulent are available for replacing exhausted or weakly growth cut away. The quickest way of raising a stock of Hybrid Perpetuals on their own roots is by dibbling in strong, well-ripened lengths of growths any time during the latter part of October, November, and even December, and it is also possible to root a considerable number of the March prunings. As a rule, those inserted in October and early in November strike roots with the greatest certainty, and that, too, in a position where many will perfect several blooms during the following season. The best position for these is the open ground, this being manured if at all poor and thoroughly broken up prior to the insertion of the cuttings. The latter may be of any size—say, from 6 inches to 12 inches in length—preference being given to those of the largest size, and the harder or better ripened they are the more certain are they to strike. Heels are neither necessary, easy to procure, nor advantageous; but the cuttings should be cleanly cut to a joint, and be dibbled in or laid in Box fashion at once, as so much depends upon their being preserved fresh and plump. Only a few minutes elapse from the time ours are taken off the plants till they are inserted, and they invariably strike well; whereas if allowed to lie about for a few hours they get dry and commence to shrivel, thus completely spoiling all chances of a good strike. We usually put in the cuttings in rows 18 inches apart and 9 inches asunder in the rows. About half their length is buried in the ground, and particular care is taken that each touches the bottom of the hole or trench made for them, the ground about them being made as firm as possible by trampling. We also find that ashes of any kind, well mixed with our heavy soil, suits Rose cuttings, which also lift with fewer broken roots where it is used than would otherwise be the case. A surfacing of the same material and an occasional trampling also serve to prevent upheaval by frosts, and in the case of very severe weather being imminent, it is considered advisable to roughly cover the cuttings with straw litter. Supposing all has gone on satisfactorily, the following winter or early in spring every other plant should be transplanted and blanks made good where necessary. In this manner we have a cheaply and quickly formed bed of serviceable Roses, which are again replanted or re-arranged when too large for the space allotted to them. It is frequently stated, as a fact founded upon experience, that

LATE WINTER AND SPRING-MADE CUTTINGS seldom root at all satisfactorily; but I do not think it has ever been explained why this should be so—at least, not to my knowledge—in any horticultural periodical. Those who do not possess a stock of healthy dwarf Roses experience a difficulty in procuring a number of strong cuttings, unless, indeed, they cut back their standards to an

injurious extent, and this but few would think of doing. In February or early in March no harm would, however, be done by freely thinning out a number of their particularly well ripened shoots suitable for making into cuttings. To dibble out these cuttings into an open piece of ground similar to that recommended for the autumn cuttings would, however, be so much labour and space wasted, as it is quite certain but few if any of them would strike root. As a matter of fact, the cuttings must form a callus before leaf growth commences, and it has been found that it takes fully three months for the cuttings to accomplish this. Should the stored-up sap in a cutting by any chance be expended on leaf growth, and which in the case of the spring cuttings is not easily prevented, then a collapse may soon be expected. From this it will be seen that the foot of a north wall or a north border is the best place for them, and even in this position they will start into growth long before there has been time to form the necessary callus. When this happens disbudding must be resorted to till the three months have expired, and then when the lower shoots are allowed to develop, it will be found that roots will also be forming for their support. The American plan of burying a number of Rose cuttings in layers in a box of sand at the first trial was satisfactory up to a certain point, as nearly the whole of them during the winter formed a good callus, but beyond this only a very few advanced, and in the end the experiment, both in my case and that of a friend, was a failure. To sum up, then, we find that cuttings made in October, November, and even as late as the early part of December, should be given an open position, and those made later should be given the coolest position available, and be kept from growing till root action is also tolerably certain.

VARIETIES THAT STRIKE READILY.—There are some sorts that do not strike so readily as others, and also some that bloom more freely than do others under similar treatment. It is a curious fact that thornless or nearly thornless sorts are the easiest to propagate, and fortunately all of these I am acquainted with are good and useful. Some of the best are John Hopper, Countess of Oxford, Captain Christy, Hippolyte Jamain, François Michelon, E. Y. Teas, Dr. André, Miss Hassard, Paul de Malleray, John S. Mill, Dupuy Jamain, M^{me}. Lacharme, Perle Blanche, Empereur de Maroc, Charles Margottin, M^{me}. Chirard, Sénateur Vaisse, Céline Forestier, Marie Finger, Marguerite de St. Amand, and Egeria. Other good sorts that we have also established on their own roots are Duke of Edinburgh, Comtesse de Chabillant, Marie Baumann, Maurice Bernardin, Charles Darwin, A. K. Williams, Victor Verdier, Etienne Levet, Exposition de Brie, General Jacqueminot, Louis Van Houtte, and Souvenir de la Malmaison. W. I. M.

SHORT NOTES.—ROSES.

Rose Hyminee (Mrs. L.).—Concerning this Rose about which you enquire, Mr. Wm. Paul writes to us as follows: "I remember the Rose Hyminee very well, but have not seen it or heard of it for years." I doubt if it can now be bought anywhere.

The single Macartney Rose.—We have never seen this Rose so healthy and handsome as in Sir William Bowman's garden, in Surrey, a few weeks ago. It is growing against a wall, and the bold single flowers are very handsome. We did not inquire how it was worked, but could not help noting its beauty.

Tea Roses in cottage gardens.—Many are the treasures to be found by the diligent searcher in cottage gardens. The pretty semi-double Noisette (?) Rose enclosed came from one. It is graceful in all stages of flower and bud, beautiful in colour (palest sulphur, deepening to the centre, and showing the orange-coloured anthers), and flowers in clusters till the middle of October.—G. J.

* One of many apparently nameless Tea Roses, which, ill-grown and slightly degenerate, are often very pretty and graceful late in the year.—Ed.

Rose La Reine.—This Rose, although introduced many years ago, is surpassed by but few similar in colour; in fact, it is an open question whether, as an all round Rose, it is surpassed by any. It is a good grower, whether on its own roots or budded on the Brier, and its glossy full sized flowers are very striking on a stand; but it is as a garden Rose that I recommend it, on account of its fragrance, which is very sweet.—J. C. C.

TREATMENT OF RAMPANT ROSES.

PASSENGERS by coast steamers are all too familiar with the cry, "stop her." Instantly there is a grating sound—a slackening of speed; the steam is shut off from paddle-wheel or screw, and the vessel drifts with the current or lies to. At last it seems needful to raise the same cry among the budded Briers. Stop them, or the Briers will starve out—wither up the Rose buds at their base. For the purpose of keeping the latter dormant, the Briers have been allowed to run till the end of September; but now that the dormancy seems in danger of being purchased at the risk of shrivelled

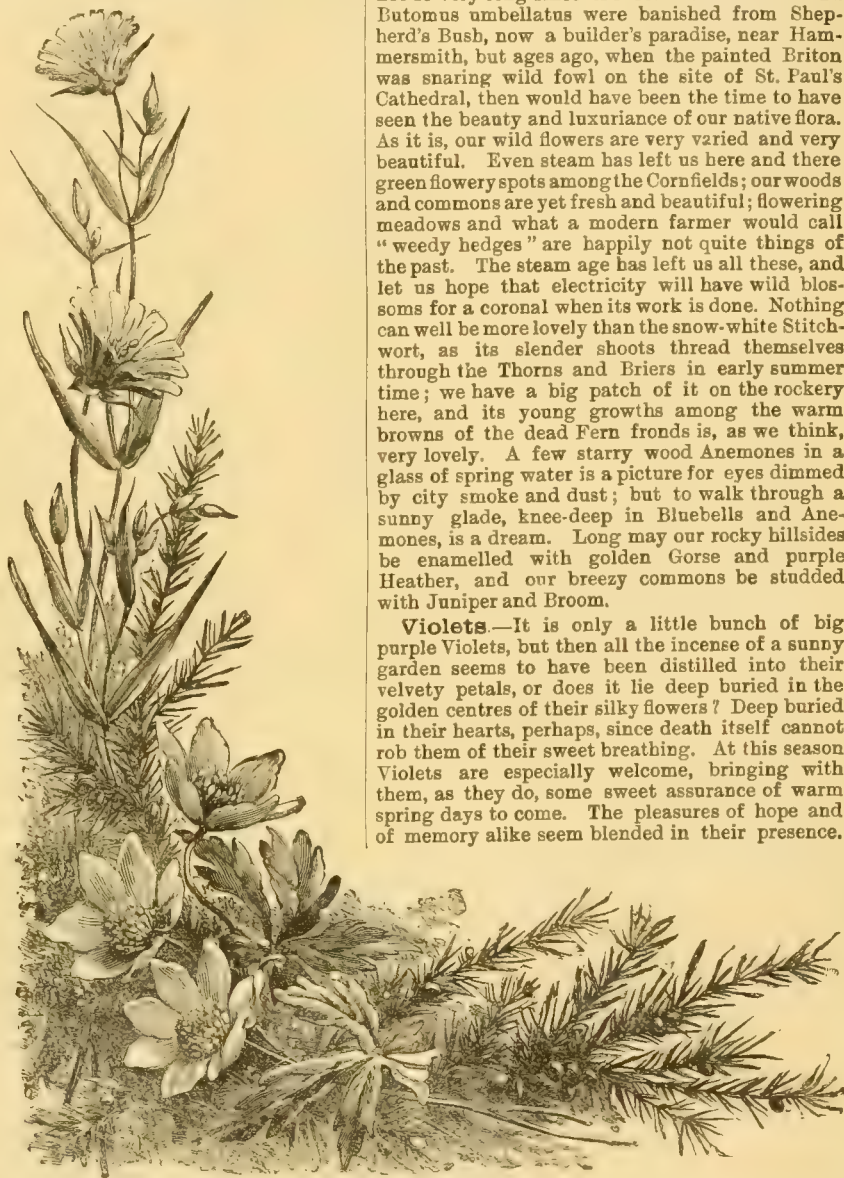
buds, the latter may be plumped up now with but little risk of being forced into active growth.

D. T. FISH.

NOTES.

Native flowers.—Anxious as we now are to collect the wild flowers of other countries, beautiful as are the floral treasures of Alp and Apennine, yet our gardens at home can never be complete without the introduction and culture of the best of our native flowers. At one time England must have been one vast wild garden. It is not so very long since the common Bulrush and Butomus umbellatus were banished from Shepherd's Bush, now a builder's paradise, near Hammersmith, but ages ago, when the painted Briton was snaring wild fowl on the site of St. Paul's Cathedral, then would have been the time to have seen the beauty and luxuriance of our native flora. As it is, our wild flowers are very varied and very beautiful. Even steam has left us here and there green flowery spots among the Cornfields; our woods and commons are yet fresh and beautiful; flowering meadows and what a modern farmer would call "weedy hedges" are happily not quite things of the past. The steam age has left us all these, and let us hope that electricity will have wild blossoms for a coronal when its work is done. Nothing can well be more lovely than the snow-white Stitchwort, as its slender shoots thread themselves through the Thorns and Briers in early summer time; we have a big patch of it on the rockery here, and its young growths among the warm browns of the dead Fern fronds is, as we think, very lovely. A few starry wood Anemones in a glass of spring water is a picture for eyes dimmed by city smoke and dust; but to walk through a sunny glade, knee-deep in Bluebells and Anemones, is a dream. Long may our rocky hillsides be enamelled with golden Gorse and purple Heather, and our breezy commons be studded with Juniper and Broom.

Violets.—It is only a little bunch of big purple Violets, but then all the incense of a sunny garden seems to have been distilled into their velvety petals, or does it lie deep buried in the golden centres of their silky flowers? Deep buried in their hearts, perhaps, since death itself cannot rob them of their sweet breathing. At this season Violets are especially welcome, bringing with them, as they do, some sweet assurance of warm spring days to come. The pleasures of hope and of memory alike seem blended in their presence.



Stitchwort and Wood Anemones.

up starvation, it may be better and safer to stop the Briers. This may now be done with the satisfactory result of plumping up rather than bursting the Rose buds at their base; for though the tops of the Briers run on as if they would grow for ever, yet their leaves become brown, showing a near approach to maturity; hence the partial arrestment of the sap has become safe, and is likely to strengthen rather than unduly excite the Rose buds. However, the cutting back must not be carried too far, as should a dripping November and a mild December ensue, the buds may be forced to burst on the very threshold of winter—the most destructive of all seasons. But if a foot or two of the Brier shoot is still left in advance of the Rose

They are the queen's messenger blossoms of the garden, carrying the last secret of the autumnal Sunflower all through the Siberia of our winter and breathing its sweet news into the opening florets of the Auricula and into the golden chalice of the earliest Daffodil.

Autumnal Narcissus.—When I was at Ware's nursery the other day I saw the little Narcissus elegans in flower. It has Rush-like leaves and scapes, and flowers about the size of those of a common white Jasmine. I have here in pots bulbs of the green-flowered Narcissus (N. viridiflorus); but, alas, they refuse to throw up their flowers with me, although they made strong leaf growth. But I live in hope, knowing, as I

do, that in the garden "nothing is impossible." This, indeed, should be the motto or watch-word of all gardeners, especially of the younger ones—"Nothing is impossible;" but I was just a little surprised this morning (October 27) to see a plant of *N. Tazetta* var. throwing up a couple of scapes, one of which bore an expanded flower and a couple of buds. *Narcissus Tazetta* blooming in the open air in October is quite a new experience to me. The chances are that it was forced early last season and went to rest in spring, and so, after our exceptional summer, has awakened sooner than usual on the "early-to-bed-early-to-rise" principle.

Before the frost.—The Dahlias are yet in bloom. *Senecio pulcher* is bright and pretty, and there are blossoms bright and beautiful on the beds of spring-sown Anemones. The purple trumpets of *Convolvulus Jalapa* dangle from the branches of a Rose tree on a sunny wall, and the flies yet cluster on the honeyed flowers of the Michaelmas Daisies in the sunshine. *Milla biflora* and *Fessera elegans* are in flower; so also is *Saxifraga Fortunei*, and at Cambridge the other day I saw a clump or two of the golden *Sternbergia lutea* bearing a hundred flowers or more. The *Colchicum* are blooming still, and the fragile autumn Croci are pretty, albeit tossed and broken by rude winds. Even yet there are late auratum Lilies and scarlet Gladioli in flower among the swirl of yellow fallen leaves.

Gardeners' Benevolent Institution.—The secretary of the above society is, as I learn from the papers, anxious to obtain a sum of £420 to complete the capital necessary for an increase of £4 yearly in the pensions now granted. The sum is not a large one, and if every gardening journal would lend its aid and receive subscriptions of not less than a shilling nor more than half-a-crown from bona-fide gardeners, the whole sum might be obtained in less than a month. Hundreds, if not thousands, of gardeners would give a small donation in this way who cannot afford to subscribe a guinea annually. If the secretary will take the trouble to ask the aid of the press and of the principal nurserymen throughout the country, I think the sum desired may very soon be realised.

Narcissi abroad.—I was much interested in an article under the above heading in THE GARDEN for October 4, but what I should like to hear is how and where Narcissi are most luxuriant and abundant in their native habitats. Mrs. Bridges, in her "Travels Round the World," alludes to yellow Jonquils as growing wild on the hillside roads in India, and a friend has just sent me the following note on the same subject: "I observed a note recently in THE GARDEN about Indian Daffodils. My son, who is in India, lately came home, bringing me about a dozen Daffodils from the hills of Cabul, where he says they grow wild. They are from his description a variety of *Tazetta* (? *orientalis*). When I planted them in July they began to grow at once, and those out-of-doors must be killed by winter, being a foot high (no buds); those in pots will perhaps flower in the greenhouse." Can anyone else give us any information on Daffodils abroad?

Daffodil notes.—Mr. Brockbank's notes at p. 362 are very interesting, and I do not wonder that he should have thought that the late Mr. Leeds raised more seedling Narcissi than anyone else. I thought so myself until quite recently, when Mr. Barr informed me that Mr. Backhouse bears away the palm for quantity, as well as for quality. I am surprised, however, that Mr. Brockbank should ask us to believe that the form of *N. incomparabilis*, figured in Hale's "Eden," is the same as the Sir Watkin chalice flower, now being sent out by Messrs. James Dickson, of Chester. In the *Gardeners' Chronicle*, April 26, 1884, Mr. Brockbank tells us he saw flowers of Sir Watkin in the Manchester shop windows in the spring of 1883, and that he then mistook them for those of *N. Princess Mary* of Cambridge. Again, in the spring of 1884 he saw it, and at first mistook it for *N. Emperor*. Now we are asked to believe that it

has been known a century and a half! That it should have escaped recognition for the fifteen years it was in Mr. Pickstone's possession is little short of a miracle, but that it is the old original *N. incomparabilis*, as figured in Hale, is a suggestion not to be believed. Even were it so, its value as the very finest of the Queltia section is none the less. No matter whether old or new, it is the finest of its race, and that is saying a great deal. As to the high priced varieties, not half as good have been offered of late years at three times the cost of this one. That it may possibly exist in other parts of Wales is not unlikely, but it is not likely to be wild (*i.e.*, indigenous), however plentifully it may be naturalised. As to its beauty, there can only be one opinion, and under good culture it is quite as likely to gain in size as it is to deteriorate.

English names.—The publication of a comprehensive dictionary of the English names of garden and other plants (see p. 354) is a step in the right direction, and is a venture likely to meet with success. Latin names must ever be used first and always, but there is a large and intelligent class who cannot learn, or care not for learned nomenclature. Besides, it is in the vulgar tongue that all the poetry, the sentimental, the cherished associations of home and country and of friends reside. The very name of the field Daisy calls up the genial spirit of Chaucer and the pathos of Burns. Speak of Daffodils, and the names of Shakespeare and Wordsworth and Herrick stand writ on their golden petals more firmly than if writ on brass. I think it was Leigh Hunt who said that no fairies ever swung themselves in the bells of the wild Hyacinths in his time, and when asked why not as well as in the time of Shakespeare, he said the dreadful language used by botanists in speaking of innocent blossoms drove them all away.

Pitcher Plants at Chelsea.—*Nepenthes* have been for years better grown and more numerous at Messrs. Veitch's nursery than anywhere else, but we never saw them so luxuriant as they are at the present time. It is something to see the great speckled urns dangling by the thousand, and to see the plants as vigorous amid London smoke as they are in the Tropics 10,000 miles away. *N. Mastersiana* as seen in the warm houses at Chelsea is most luxuriant, and promises to be the best of all the hybrid kinds, and superior even to *N. sanguinea*. *N. Northiana* and *N. Rajah* are both showing fine pitchers. In unique grace and beauty there are but few other plants which can rival these when well grown. The main points essential to their vigorous growth are heat and moisture, and a houseful of the best kinds will yield as much pleasure as do the choicest of Orchids or other exotics. *N. Northiana* is now in great beauty, the rim of its pitcher being most beautifully painted.

Kew Gardens.—Notwithstanding that this is the dull season in gardens generally, the Kew establishment is most enjoyable at the present time. That great improvements and additions have been made of recent years goes without the saying, and Kew is at the present time more truly representative, not only as a collection of plants, but of cultural skill than ever it was before. The old Victoria house is now used for a collection of tropical Water Lilies, and to see these when at their best is like a beautiful dream. Here the rosy and white Lotus are flowering; so also is *Nymphaea zanzibarensis*, with erect flowers of a rich metallic blue colour. The noble collections of Cycads in the Palm house are greatly in advance of what they were in vigorous growth and in arrangement, and the removal of the hot-water pipes from the main walk in the great temperate house is a gain in several ways. The Marianne North gallery is one of the most notable additions of recent years, and is alone worth a long journey to see, but turn where one may order, health, and energy are displayed.

VERONICA.

Fuchsias (Amateur Gardener).—Cut down your Fuchsias which have shed their leaves in spring.

FRUIT GARDEN.

CANKER IN FRUIT TREES.

A LETTER just received from a friend in the north of England says, "We have a poor crop of Apples and Pears, but the quality is good. The trees are badly cankered, but we cannot do anything with them, as we are so overdone with work." The Apple is by far the most useful of our hardy fruit trees. It is cultivated in every garden, sometimes very successfully, but oftener the results are not such as a gardener ought to feel proud of. During the last season I would be afraid to say how many questions I have had to answer about canker in Apple trees, and the data have seldom been sufficient to enable me to give a satisfactory answer. For instance, if the trees are old and badly cankered all over, their case is hopeless, and the only practical advice is to order their removal, and to plant young healthy ones. Even, however, if the trees are cankered, they may, in some cases, be all that there is to keep up a supply of fruit for the household, and to grub them up all at once would put a sudden stop to the supply. It is just twenty-one years ago this month since I undertook to renovate an old garden. It was of considerable size, and contained several hundreds of fruit trees; nearly all of them were very old, most of them of large size, and suffering from many years of neglect. The Apple trees were badly cankered, even where young trees had been planted to supply the place of old ones; they seemed to become attacked by canker in a year or two. Moreover, there were no proper walks, or any division of the garden into quarters. The first thing I did was to construct paths 5 feet wide, and on each side of the paths borders were made 9 feet wide. These were trenched up to the depth of 2 feet, and any trees that were in the way were grubbed out, taking care to trace the roots as far as possible, and grubbing out every one of them as we went on with the work. The ground being very poor, a layer of manure was placed in the bottom of the trench; over this was put the top spit of the next trench besides the loose earth, then another layer of manure, and another spit with the loose earth were thrown out; every trench had the bottom well forked up before the manure was thrown into it.

PLANTING.—About 7 feet from the Box edging a row of fruit trees was planted, principally Apples on the Paradise stock; but we also had Pears on the Quince, Cherries on the Mahaleb, and also some Plum trees. A good sized hole was taken out for each tree, and about a barrow-load of good loam was placed round the roots of each. I fancy we gave them too much manure in the trenches, as it caused them to make such vigorous growth that I thought it desirable to lift the trees the next season. This we did, and took the opportunity to trench the ground over again. The trees were carefully planted with more loam round the roots, and encouraged to form roots near the surface by mulching with decayed manure. The 7-foot space between the path and the trees was filled with a row of Gooseberry and Currant bushes. After a while, the trees occupied the entire space. The borders received a dressing of decayed manure annually in preference to digging amongst the roots, and two or three times we were able to cover the manure with fresh soil, and by a good system of management and summer pruning the trees came into bearing at once; indeed, we had some good fruit the second year. It was predicted that we would never be able to grow trees in the garden free from canker, but we did. Three varieties of Apples only showed signs of it, viz., Ribston Pippin, Cellini, and Wellington; but as soon as they were lifted and replanted the disease was arrested and the cankered places, after being cut out, healed over. When the young trees came into full bearing we had abundance of fruit and the old trees were taken out entirely. A few were left to experiment upon, principally for the purpose of seeing whether the canker could be arrested by root pruning in cases where it had not gone too far. A Ribston Pippin and Sturmer

Pippin on the Crab stock were both rejuvenated by being root-pruned.

ROOT PRUNING.—This being the right time to do this, I will describe the *modus operandi* in as few words as possible. A tree from ten to fifteen years old should have a trench cut half round it at a distance of 5 feet or 6 feet from the bole. The trench must be deep enough to enable the operator to cut through all the roots; then take a fork and work well under the ball of earth, cutting off all roots that have struck deep into the ground. For the soil that has been thrown out some from another part of the garden should be substituted; the new soil will be better for the tree than the old exhausted material. In applying the new soil endeavour to get the roots nearer the surface than they were before. The object in doing half the roots only is to prevent the tree from receiving too great a shock to the system. During the following season new fibres will be formed where the roots were cut, and the other half of the tree can be done the following season. When the work is done in this way there is no danger of the tree being blown over, nor will the crop of fruit be lost the first year after the pruning.

WHAT IS CANKER?—Fruit trees are subject to several different diseases, and each of them often goes by the name of canker. Practical cultivators, however, know well enough what canker is. A portion of the bark becomes diseased and dies; the dead portion falls off, leaving the wood exposed, which also decays, and when the trees are badly attacked whole branches die off. Of course, wherever there is decay insects or fungoid growths appear, and it is not unreasonable to assume that insects may be the cause of canker, which some have averred, but in reality they are only the result of the disease. At all events, it has been proved over and over again that the roots getting into bad subsoil is the cause of canker, and that lifting them up nearer to the surface and giving them suitable soil to work into will cure it, or at least arrest the decay.

J. D. E.

Big flavourless Peaches.—Among the Peaches sent out of late years are several kinds that have a very poor, or even a bad flavour. The Peach varies much as regards climate, position, and soil, but our experience with some kinds is that they are invariably bad. Now, the Peach is so peculiarly delicate a fruit that, if there is any deficiency of flavour in a kind, it is not worth one farthing a tree. The whole charm of this queen of northern fruits lies in its delicate flavour, and a shade in one direction less good than we are accustomed to in the fine old kinds may make a tree not worth its place. Our raisers concern themselves far too much about size and appearance, and too little as regards the main point. Do not grow any Peaches but those you know to be first-rate in flavour. Any new ones worth growing should be as good in flavour, or nearly as good, as the Noblesse or Royal George. Lord Palmerston may be named as a bad Peach, except, perhaps for the market grower's wants.—*Field*.

SHORT NOTES.—FRUIT.

Apple Tom Futt.—This Apple, mentioned by "J. C. C." (p. 319), is one which does well here. It is one of our best varieties throughout October, November, and December. The trees invariably bear heavily. The fruit swells to a good ordinary size, assumes an intensely bright and attractive colour, and cooks better than the majority of Apples. It also gives general satisfaction as a dessert fruit.—J. MUR.

5251.—Blackberry jelly.—Put 12 lbs. of Blackberries into a jar with 2 quarts of water. Place them in a slow oven or on a stove till the juice is extracted; then strain through a fine hair sieve. Pare and core 6 lbs. of jelly Apples, and stew them down with 1 quart of water as before. Mix the juices together, and to every pound of juice allow three-quarters of a pound of lump sugar, and boil altogether till it becomes a jelly.—E. M.

—We make Blackberry jelly very successfully in the following manner: Boil the Blackberries for about twenty minutes rather slowly; then let the juice drain through book muslin all night, and in the morning to every pound of juice add 1 lb. of preserving sugar. Let it boil briskly for about ten minutes and it will be nicely jellied and will turn out of the pots. In a cold wet season the jelly will take more boiling the second time than when it has been bright and warm.—E. N. T.

TOMATOES AND WASPS.

"BELFAST" recommends planting Tomatoes to prevent wasps from attacking Grapes. I have Tomatoes growing in the back and front of a viney here and it has been swarming with wasps; therefore I should not recommend anyone to trust to Tomatoes as a remedy. I find hexagon netting to be the only preventive when wasps are so numerous as they are this season, and also destroying their nests. My plan of destroying the latter is to mark all nests with a piece of white paper, then at night to go round with a small can of gas tar, and pour about a quart down the entrance; place a little turf in the hole, and there need be no fear as to the result. I have taken fifty nests this season within a radius of a quarter of a mile, and have not been stung once.—E.

—"Belfast" says (p. 339), "if Mr. Verney will grow a few plants of Tomatoes among or in the house with his Grapes, wasps will not go near the house." This statement I can from personal experience contradict. I can positively assert that Tomatoes in vineries have little or no effect in keeping out wasps. Few have this season suffered more than we have through their ravages, many bunches of Muscats and other varieties being completely ruined by them, nothing but skins being left. We had Tomatoes in our vineries all the season. Tiffany nailed over the ventilators top and bottom somewhat stopped their ravages, but, notwithstanding this precaution, hundreds effected an entrance. We had also bottles and jars of sweetened mixture hung up to entrap them, and many were killed in that way. The bunches were put in bags, some even in double bags, made of tiffany; nevertheless the wasps eat their way through them to the Grapes. I have seen them frequently settle on the Tomatoes, so I am convinced wasps will enter vineries in spite of Tomatoes being placed therein. I never saw wasps so numerous as they are this year, though we have destroyed more than thirty nests.—GEORGE HARRIS, *Arle Court, Cheltenham*.

Foxy Grapes.—"Another Scot" lays himself open to sharp criticism this week if one was so disposed. He takes me to task for accepting his own average of weight of crop, viz., half a pound to 4½ lbs. per bunch, because, I suppose, when reduced to accurate dimensions by me from his figures, the crop looked as preposterous and impossible to himself as it did to others. He amusingly hints now that I should have allowed for a predominance of "the number at half a pound." I should first, he says, have ascertained that, whereas it was his duty to state the facts plainly at the first. However, I accept the "half-pound" explanation, in which case I ask him what there was to boast about concerning the vigour and fertility of the Vines. I am now driven by him to put the bad colour of his Grapes down to the same cause that produced the half-pound bunches, viz., debility of some kind. "Another Scot" next goes on to show that because I said "shanked Grapes were nearly always red," I meant that red Grapes must also be always shanked; whereas I said nothing of the kind, nor does it follow, and hence the comparison I suggested may easily be made.—A THIRD SCOT.

Dishonest exhibitors.—I hope this subject will be fairly ventilated. I believe I know the name of the party referred to by "J. C. C." (p. 369), but there are two down in that direction who are noted exhibitors, and also noted borrowers and lenders. They both showed fine collections at a big show not a thousand miles from Carlisle a year or two ago that were made up to such an extent from various gardens, that they were dubbed the "limited liability collections." It is to be regretted, in one sense, that such things have to be hinted at in this way, because suspicion may be thrown upon people who are innocent, but it is open to these parties to disclaim connection with the offenders, who are so well known, that they will hardly venture to join the list. It may be asked, why do not honest exhibitors take action when they know of a case? but the answer is, that they cannot saddle themselves with such a responsibility. The fear of detection will, how-

ever, sometimes prevent the dishonest exhibitor from showing. Some years ago, at an international provincial show, where valuable money prizes were offered for collections of fruit, it was known that a notorious offender had entered for the chief prize, and three other intending exhibitors undertook to keep an eye on him, and also took the secretary into their confidence, who promised to aid them all he could. The suspected party, however, got a hint of what was going on, and on the morning of the show, the space and his name were there, but neither he nor his fruit put in an appearance on that occasion. It came out at the time that this same man had frequently had Pines from Covent Garden for his collections, and had returned them after the shows. The long and short of the matter is, fraud of this description is now quite prevalent where it would not be expected, and the result is that honest exhibitors have no alternative but to stand aside, for they have no chance. It is for horticultural societies to say whether they will allow their best prizes to be appropriated by such men. I have no doubt that if single dishes only were encouraged by good prizes being offered for them, shows would be equally successful, and the system would give quite a new aspect to showing.—CORRESPONDENT.

INDOOR GARDEN.

HYACINTHS IN WATER.

THERE is something peculiarly interesting in the cultivation of Hyacinths in water. Many people cannot grow plants because they have no glass-houses, and others, especially in towns, because they have no accommodation or soil, but here we have some of the most beautiful, and certainly the most fragrant, of flowers, capable of being cultivated to a very high and satisfactory degree of perfection without a square yard of garden ground, glasshouse, particle of soil, or flower-pot. Probably those who possess all these might never desire to grow Hyacinths in water, but those less favourably situated need not be deterred from doing so, as anyone who cares to try may be successful. The only appliances needed are bulbs, water, and glasses. In order to have flowers for a long time, and in succession, early, medium and late-flowering bulbs must be secured, but a very few successional sorts will be found more useful than a large quantity of very early or very late ones. Some of the earliest sorts may be taken in hand at once. Sound, medium-sized, well-ripened bulbs are best. Glasses for growing them in vary in form and hue, and may be had to suit all tastes. Colour and form or quality has, however, nothing to do with the development of the flowers; indeed, as good spikes may be grown in a common upright sixpenny glass as in a rich, six-shilling transparent and ornamental one.

In beginning their culture, each glass should be almost filled with clean water, and if a small piece or two of charcoal can be put in the water, it will help to keep it pure and benefit the bulb, but this is not absolutely necessary. When the glasses have had water put in them, the bulb should be placed on the top with its base all but touching the water; then move them into a cool, dark place. A cupboard or some such place suits them perfectly, and there they should remain until roots have been emitted, and have nearly reached the bottom of the glass; they may then be gradually brought to the light. The roots will soon increase, and the top growths push upwards, and when growing freely they may be fully exposed to the light and air of an ordinary room. In a warm atmosphere the water soon evaporates, and this must be filled up from time to time as may be necessary. Should the water begin to smell offensively, empty it out, and fill up immediately with more perfectly clean.

As the flower-spikes grow up and become top-heavy, they must be supported with wires made for the purpose, and it is well to put these in before the heads of bloom fall to one side, as if once twisted their expansion may be checked. Invalids, and all who are much confined to rooms,

should try the culture of Hyacinths in this way, as watching the delicate root growth, the increase of the leaves, and the expansion of the sweet flowers is interesting. J. MUIR.

Christmas Roses in pots.—At one time it was rather rare to see Christmas Roses in pots; now one frequently meets with them in good condition grown in that way, a fact which testifies to the estimation in which this fine old hardy flower is now held. Seeing how highly white flowers are valued in winter, it seems strange that this way of growing Christmas Roses should not have become more popular years ago. The blooms come so much finer when protected than out of doors and with so little forcing, that they can be had in abundance at Christmas and during January, just when there is a more or less scarcity of white flowers. I do not know whether it is better to keep the plants in pots the year round or to plant them out after flowering, but I know that they can be well grown either way. If grown in pots, they should be plunged and get plenty of liquid manure when growing.—J. C. B.

5265. — **Anthracite coal.**—We use large quantities of this coal, and find it to be in every way satisfactory. For those who have long ranges of houses to heat there is nothing to equal it for cheapness and heating power. It takes a little longer to light than coke, but I find that I can light it and get up the heat in at least three-quarters of an hour, and our boiler has to heat 1000 feet of 4-inch pipe. Some have an idea that this coal is difficult to manage, but that is a mistake; it is not so difficult to manage as coke, and it requires less attention. All the trouble it gives us is first thing in the morning to draw out the dampers for about an hour, and if any coal is wanted it is supplied during that time; then the dampers are put in, and the same thing is done again in the evening. Treated in this way, I never find it to burn too fast, and it keeps up a steady, constant heat.—JOHN STAPELTON, *Bristol*.

Ixias and their treatment.—The coloured plate of *Ixias* which appeared in a recent number of THE GARDEN will probably be the means of inducing some to grow these charming Cape bulbs who have not hitherto done so. To me it is a matter of some surprise that *Ixias* should not be more popular than they are, seeing that they are just the class of plant which anyone having but limited accommodation for tender plants would be likely to take in hand. Their growing time is in winter and early spring, and yet they need no fire heat to keep them safe, only just the protection of an ordinary frame, and at no period of their growth do they demand more than the most ordinary care. No time should now be lost, however, in potting the bulbs, as the sooner they commence to make roots the fuller will the pots be of them when they commence to throw up their bloom-spikes, and it is well known that all bulbs bloom best in a root-bound state. Sandy loam and a little leaf soil suit them best, and they should be potted rather firmly, burying the bulbs about an inch, and putting quite a dozen good-sized ones in a 6-inch pot. It is better to use the soil just moist only, then a moderate watering wets it sufficiently. It is the same with *Ixias* as with *Lilies*; if the pots can be plunged up to their rims, they make roots more freely than they otherwise would do, the soil being thus preserved in a more uniform state of moisture. In a general way, they will not need water from November to February or March when plunged, otherwise they want looking to occasionally. A frame is the best place for them until they come into flower, giving abundance of air, in fact, never taking it off except when there is hard frost. Greenhouse temperature is too high for them.—J. C. B.

Salvia Pitcheri.—Few plants are more deserving of notice for conservatory decoration in autumn than this distinct and beautiful *Salvia*. Although it cannot approach *S. patens* in size of flower, its deep blue colour is nearly equally good, and its distinct habit and flowering season should be sufficient to make it a favourite with cultiva-

tors. Both are indispensable plants, and both require similar treatment as regards preservation in winter. All other greenhouse *Salvias* are propagated from cuttings made of the points of the branches, and these invariably root readily when placed in heat; but by adopting this plan of propagation in the case of *S. Pitcheri* last year, it failed to strike. The wood was hard, and the cuttings remained fresh for a long time, but did not emit roots. When autumn came, a repetition of the fine display of the previous year was unfortunately missed. The old plants did not make much growth, yet they formed the stock for the present year. On the advice of a correspondent of THE GARDEN at the time, we cut the plants back hard and placed them in a cool house all winter, giving some water occasionally when the soil appeared to be too dry. Plenty of fine, strong young shoots were produced early in spring that rooted and grew as freely as the other sorts taken from branches. The young plants were grown on and frequently pinched when young; but the habit of the variety under notice is so tall and the branches so slender, that it is well-nigh impossible to keep it dwarf and at the same time obtain good flowers. Plants grown in 6-inch pots attain a height of 3 feet, or even more, and as *Salvias* are terminal flowering plants and very brittle, they must be allowed to grow up straight. Those propagated by cuttings in March are now flowering most profusely, and prove a distinct and pleasing acquisition. A light and airy position in the greenhouse is indispensable if the flowering season would be prolonged. To avoid the somewhat leggy appearance of *S. Pitcheri* being noticed, the plants should be arranged on the ground, and Ferns or other dwarf, fine-foliaged plants should be intermixed with them. A much better effect is produced by a group than when the plants are dotted about separately. All *Salvias* are much benefited by being supplied with manure water after the pots become nearly filled with roots. They may be all grown outside and treated similarly in summer; but the importance of cutting down *S. Pitcheri* and wintering it as a distinctly herbaceous plant, is a material point towards success in its propagation the following season.—BETA.

Selaginella canaliculata.—This is of the most striking of the scandent *Selaginellas*—indeed, we might almost call it arboreal, for it is by far the stoutest and most tree-like species with which we are acquainted. The stem is erect, round (not tetragonal, as described by its introducer, Mr. Bull), as thick as the little finger, very succulent, dark brown at the base, becoming paler near the top, the topmost portion being light or translucent green. Its thickness, succulence, and the few scale-like leaves which are scattered over its surface give the stem the appearance of the tallest and best grown French Asparagus. The main branches are developed in a distichous manner, and are semi-erect; from these spring the secondary branches or fronds proper, which are flat, triangular in outline, and pale green. The length of the whole branch is 3 feet, and the width about 18 inches at the base. We have recently become acquainted with several new and distinct species of scandent *Selaginellas*, but *S. canaliculata* is by far the finest of them. What it will be when fully grown we cannot at present say, for our measurements were taken from a healthy young plant in the Kew collection, which, we believe, is less than six months old. It is potted in a strong loamy soil, with a little leaf-mould, sand, and cow manure added. We take this opportunity to call the attention of admirers of the most ornamental of the Cryptogamic family to the fine collection of *Selaginellas* which exists at Kew. These plants are, in our opinion, sufficiently varied both in form, habit, and other characters to afford much delight to anyone who grew a collection of them alone. They are all so easy to grow that almost anyone could succeed with them. We are much in want of a good descriptive list of the cultivated species and varieties of tropical and temperate Club Mosses.—B.

GARDEN FLORA.

PLATE 464.

THE ICELAND POPPY.

(*PAPAVER NUDICAULE*.)

A FEW years ago the Iceland Poppy was scarcely known outside of a botanic garden, but now it is justly considered to be an indispensable hardy plant, and its flowers amongst the most beautiful of those of summer. At one time only the white and yellow forms of this Poppy were known, but now we have all gradations of tint, from snow-white and yellow, through reds, to almost a scarlet. The petals, moreover, are generally beautifully crimped and shine with a satiny lustre, and, as may be seen by the plate, of a beautiful cup-like form. To each of the varieties a name has been given indicating the colour of the flowers. That in the typical *P. nudicaule* is considered to be a clear yellow. This typical form has a wide geographical range; it is found in Eastern Siberia, the Altaian Alps, Asia Minor, Dauria, &c., but is confined to the northern half of the Old World. The reddish orange-flowered form is named *rubro-aurantiacum*; the citron-yellow, *luteum*; while the richest colour, almost a scarlet, bears the name of *punicum*. The kind called *album* is a delicately beautiful variety, the satiny white flowers of which are as plentifully produced as in the other forms of *P. nudicaule*. There has been, and still is, a good deal of confusion with regard to this Poppy. Linnaeus named two Poppies respectively *Papaver alpinum* and *P. nudicaule*, but long ago botanists came to the conclusion that these two names applied to one plant only, inasmuch as every intermediate gradation can be found between the Linnean *P. alpinum* and *P. nudicaule*. The former is characterised by its dwarf growth, its finely divided foliage, and its small white cup-like flowers, having a greenish spot at the inner base of each petal. This form, too, is probably identical with the so-called species *P. Burseri*. Taking this fine cut-leaved and white-flowered form as the one extreme, almost every connecting link can be traced in the Kew herbarium specimens to the other extreme form, which is represented by *P. nudicaule*, and which is popularly called the Iceland Poppy. Whether there is one or more distinct species among these alpine Poppies must be left to botanists to settle, but for garden purposes it is evident that the names *P. alpinum* and *P. nudicaule* must be retained, inasmuch as the plants which are represented by them are abundantly distinct from a cultivator's point of view. Of the true alpine Poppy there appears to be one, if not two distinct varieties. One named *pyrenaicum*, found among rocks in sunny places on the calcareous mountains in the south of Europe, and particularly the Pyrenees, has deep orange red flowers; another, named *flaviflorum*, has yellow flowers. These two appear to differ in no way except in colour, but they come true from seed.

P. NUDICAULE may be at once distinguished from the true *P. alpinum* by its larger and more robust growth, and especially by the foliage, which is much less divided; in fact, in some instances it is scarcely cut at all. As in *P. alpinum*, the flower-scapes are naked, but they are taller than those of that species; they vary from 6 inches to 15 inches in height, and their flowers are often as much across as the width of an ordinary sized teacup.

* Drawn at Munstead, July 20.



CULTURE.—*P. alpinum* and its varieties are essentially rock garden plants, but *P. nudicaule* is a capital plant for growing in borders, and there are few prettier sights than a large and well-grown mass of seedlings, representing all the varied colours of this Poppy. The best soil is a moderately rich and light loam for *P. nudicaule*, but *P. alpinum* is better in a poorer soil. Both must have fully exposed positions, and the soil must be well drained in order to secure success. Both of the alpine Poppies are strictly hardy perennials, but, like a good many other alpine perennials, they are liable to perish. It is, therefore, best to raise seedlings annually in order to keep up a good stock of plants. Seeds are abundantly produced, and should be gathered and sown as soon as ripe in pots in a frame or under a handlight, so that by the autumn the seedlings will have grown strong enough to withstand the winter. Indeed, seed may be sown at any time during spring, summer, or autumn. On warm soils the plants are quite at home, and even become naturalised. By far the best results as regards growing the Iceland Poppy that we have seen are in the garden at Munstead, near Godalming, where Miss Jekyll pays especial attention to this plant. Her plan is to save seeds only from the white and vermilion varieties, but she always has amongst the resulting seedlings a large proportion of the typical yellow kind.

On the light, warm soil at Munstead this Poppy is thoroughly at home, and during several months from late in the spring till late in summer, it forms one of the chief features of the garden. Miss Jekyll does not confine herself to a few plants here and there, but makes large beds consisting of the different colours mixed, the result being a most beautiful display. Some are under the impression that all Poppies are so fugacious that they are worthless for cutting. Such, however, is not the case, as may be inferred from the fact that *P. nudicaule* is being grown largely in the neighbourhood of London for supplying cut flowers for market. Miss Jekyll puts them to good use in a cut state. She says, "If the flowers are cut early every morning soon after expansion, they endure fresh and fair several days in vases indoors."—G.

Selaginella grandis.—Amongst a host of beautiful Club Mosses *S. grandis* stands out prominently as a very distinct and handsome species. Introduced from Borneo about two years ago by the Messrs. Veitch, this plant on being exhibited at South Kensington won golden opinions from all who saw it. In the broad, flattened, bright, shining green fronds or branches, in the unusual width and closely set arrangement of its leaves, and in the graceful tassels of long spikelet points which fringe the ends of the branches, *S. grandis* possesses characters of the most exquisite grace and beauty. In height the branches grow to about 18 inches, and measure quite a foot across the broadest part; the ends of the branchlets have a slight curve downwards all round the frond. *S. grandis* is distinctly tropical in its requirements; in fact, it is really a glass-case plant, for we have never seen it thriving very satisfactorily unless in a Fern case or under a bell-glass in a moist, shaded stove. In the tropical fernery at Kew there is a specimen of this plant, which in the health and luxuriance of its growth is all that can be desired. It is planted in a pan in a mixture of peat, leaf-mould, and chopped Sphagnum; this pan is buried under a thick layer of green Moss, the whole being covered with a Fern case and kept moist to saturation. From the base of the plant runners are sent out under the Moss for about 6 inches before pushing up and growing erect, and finally deve-

loping into fronds. This habit makes the layer of Moss of great service to the plant. The green of the leaves of *S. grandis* gives the branches a shell-like appearance, and the likeness to a shell is enhanced by the flattened, smooth surface and the curve of the branchlets.—B.

FLOWER GARDEN.

DEEP V. SHALLOW-PLANTED BULBS.

DOUBTLESS much may be said upon both sides of this question. The most successful cultivator of bulbs or other plants is generally he who, by long and watchful experience, learns what the particular plant does when left to itself. It is absurd to lay down a hard-and-fast line as to how deep bulbs in general may and ought to be planted, seeing that different species of the same genus will be found naturally at widely varying depths. Take, for instance, a collection of *Crocus* seeds; sow them in pots—all in the usual way—covering them with half an inch of soil; turn the young bulbs out when one year old, and note the result. Some will be found where you sowed the seeds, others half way down the pot, and others again right down amongst the crocks; the same thing happens if sown in the open ground. Now, in the face of this, would it not be, to say the least, unpractical to assert that all *Croci* should be planted on the surface, immediately below it, or at any greater or lesser depth? The same applies to Tulips, to Narcissi, and, in fact, to all other families of bulbous plants. I cannot see what can be gained at all from planting Daffodil bulbs on the surface. They may be, and no doubt are, hardy enough to survive the summer's heat and winter's cold so placed; but are they any the better for either? And seeing that if planted on or near the surface they have a knack of getting down to a safer and more comfortable level, of what use is it to endeavour to make them conform to unsuitable conditions, or those under which they are not happy?

Planting rare bulbs on the surface is objectionable, inasmuch as slugs sometimes eat out their centres; but of course, on the other hand, it is quite possible to put down bulbs so deep that they cannot come up. Daffodil bulbs as a whole will take care of themselves and grow and bloom in a satisfactory manner if planted at a reasonable depth, and the line need not be drawn at an inch or two more or less; 4 inches or 5 inches is a safe enough distance from the surface, and all hardy bulbs will succeed so placed. The arguments in favour of shallow planting are so far worthless. For example, "J. S. W." (p. 292) instances a row of *Tritomas* planted close to the surface that bloomed weeks before another line or clump planted deeper. Is he aware that there are *Tritomas* and *Tritomas*—species which bloom naturally in June or July, and others again which never bloom before October? I recorded in the pages of THE GARDEN a few weeks since six days' growth of the flower-stem of *Tritoma nobilis*; the total was 20½ inches, or nearly 3½ inches per day. Now, is it not absurd to say that half-a-dozen inches of soil over the crown of this plant would affect its time of blooming by several weeks? When *Tritoma* growth really begins, its upward push makes short work of a few inches of soil, and instead of there being weeks between the blooming of shallow and deep-planted clumps, there could not be at most more than a few hours. Another point against shallow planting in this case will probably be discovered by "J. S. W." after the first hard winter. By that time he and others may have learned that it is the invigorating influence of genial sunshine upon the leaves which causes bulbs to ripen, and not the exposure of the bulbs themselves to elements not their own.

I am surprised to see any writer with a knowledge of our Irish climate advocating the shallow planting of bulbs, which usually ripen indifferently in consequence of the absence of summer warmth, and which require a period of summer rest. Summer rest I take to mean a period of

uniform dryness and comfort—conditions which they most assuredly would never enjoy during an average Irish summer if planted close to the surface, during which they would usually be dry for a week, then soaking wet for a fortnight, perhaps a month, get half dry again, and then be subjected to another downpour, the very conditions, in fact, which render the cultivation of many bulbous plants here most difficult. Summer rains, as a rule, only affect the surface soil. It follows that bulbs at a reasonable depth must be in a more comfortable medium. No doubt the gradual withholding of water from all bulbs which come from warmer climates than our own would be sure to bring about the ripening which we desire, and this is just the difficulty experienced here. Our skies are too dripping and the soil never sufficiently devoid of moisture to compel them to cease growing. *Narcissus Tazetta* planted here in ordinary moist soil goes on growing all the summer, and dies in about three years after planting. The same thing happens with *N. Bulbocodium*. "F. W. B.'s" case of the latter under Holly trees fairly illustrates what I have just said. The position is sunny; the trees are spreading; the surface soil is completely occupied by Holly roots, all active and ready to drink up every drop of moisture which succeeds in getting through the mass of foliage overhead; the *Narcissus* bulbs and roots being down below, get next to no moisture after their winter's soaking, which would be moderate enough probably. They have a maximum of warmth with a minimum of moisture, and are forced to complete their growth simply through lack of cold and moisture to retard it. Now what we have to do is not to subject plants to conditions of growth altogether unnatural and at variance with their ordinary requirements, but to imitate as well as we can those under which they naturally succeed, and "J. S. W.'s" theory, that as we go north we should steadily plant our bulbs nearer and nearer to the surface, has not at all a practical ring. Considering that we are at present a long way from the Pole, he would either have to stop at the surface a long way short of the Pole, or plant them up above it in advancing from south to north. The only change required is to move from the open field towards the foot of a warm wall, and a proper soil preparation, and glass or other protection as the coldest region was reached, would give much better results than sticking the bulbs in the surface could do.

Newry.

T. SMITH.

DAFFODIL NOTES.

N. BICOLOR HORSEFIELDI.—After several years' discussion as to the merits of this grand flower, it has by general consent assumed the title of the King of Daffodils. Its history has frequently been noticed in your columns, but as the subject has recently been thoroughly discussed in the *Manchester City News*, a few remarks may be of general interest. At the Daffodil conference it was stated by Mr. Burbidge, on the authority of Mr. Percival, the president of the Lancashire Botanists' Association, that it was a chance seedling; and as it appeared to me that this tended to rob John Horsefield of the merit which attaches to the successful raising of a florist's flower, and having always understood that it was a carefully raised seedling, I wrote to the editor of the *Manchester City News*, asking information from the many botanists who had known Horsefield. The subject attracted much notice. Everybody who knew anything about it was consulted; many letters appeared in the *City News*, and the matter was thrashed out in true Lancashire fashion. One of Horsefield's old friends who had known him thoroughly wrote that he could not see how he could be deprived of the merit of raising this seedling, "for surely nobody else raised it; and had it not been for the fine pod of seed which he detected in his garden, sowing it, and watching it with the greatest anxiety for the result, we should not have had any *N. Horsefieldi* now." Others also testified to having seen this seed-pod growing upon *N. bicolor*. It is thus perfectly clear that the seedling came not by chance, but was

the reward of careful culture. None of the correspondents could state that Horsefield took any special care in crossing *N. bicolor*; but there is the evidence of the late E. K. Norris, of Northenden, that it was the result of the pollen from a very fine flower of *N. pseudo-narcissus*. This is denied by many, but there is no direct evidence to the contrary; whereas it transpired during the correspondence that the father of Mr. E. K. Norris was an intimate friend of Horsefield's, lived in his neighbourhood, and was a frequent visitor at his garden, as also his son had been. It is thus very likely that Horsefield may have told Norris what he divulged to no one else, and that it thus came to his son, who told it to me, and who knew that I had made public use of the information. I firmly believe that this is the true history of the origin of this fine Daffodil, and it is further confirmed by the statement of a correspondent to the *City News*, who said that from the same batch of seedlings there were two other forms, one of them resembling *N. princeps*. This certainly points to the parentage of the large form of *Pseudo-narcissus*, which would be very like *N. princeps*, and one would expect the result of such a combination to produce *N. Horsefieldi*. John Horsefield, although a handloom weaver by trade, was no common man. Richard Buxton speaks of him in 1821 as being not a mere country herbalist, but an excellent scientific botanist. He was president of the Prestwich Botanical Society for thirty-two years, and served in like capacity at all the botanical meetings in the county, so that in his autobiography, published in the *Manchester Guardian*, March 2, 1830, he stated that he had attended 400 meetings, and had had thousands of specimens through his hands. Grindon describes him as a profound botanist and a well-read man. These botanical meetings are continued to this day, and there is an excellent botanical library in the meeting room at the "Eagle and Child" Inn, Whitefield, within sight of the place where Horsefield's house and garden formerly stood. Over the chimney-piece is a framed memorial card to his memory, containing the following tribute to his worth by a celebrated Lancashire poet, Charles Swain:—

In Memory of JOHN HORSEFIELD, of Whitefield, Botanist, who died on the sixth of March, 1854, in the sixty-second year of his age.

Ye who behold God's works in Nature's ways,
And find in flowers mute anthems to His praise,
Who read the volume of eternal love
In seeds of earth, as in the stars above,
Here read a name, whose fame shall long endure,
One of poor birth, but gifted, although poor.
God, unlike man, the humblest spirit lifts,
Nor asks his wealth before He sends His gifts.
Where'er botanic science could be learned,
New links disclosed, new species yet discerned,
Where'er by wood, or lane, or heath, or hill
God open'd the book that taught botanic skill;
There Horsefield's foot from dawn to eve was seen
To learn, to teach, to be what he has been—
An honour to the soil that gave him birth,
A mind of truth, a heart instinct with worth.
Oh! may the spirit for whose loss we grieve
Our God accept—our Saviour Lord receive.

Until 1854 Horsefield retained the stock of bulbs of his Daffodil, and they were sold for the benefit of his widow after his decease. There were then twenty-eight blooming bulbs and nine small ones. This would fix the probable date of the first blooming of the seedling about 1847. I often think one might trace the commencement of the Daffodil culture, both in the case of Thomas Leeds and John Horsefield, to the influence of Dean Herbert, who had published in his "*Amaryllidaceæ*," in 1837, full particulars for hybridising the *Narcissi*, and who came to Manchester in 1840 as warden of our collegiate church, of which he subsequently became the first dean when it was made a cathedral. In 1843 his *Narcissus* hybrids were figured in one of the *Botanical Magazines*, and there is no doubt that he would influence our working florists to take up the methods of hybridising the *Narcissi*, which he detailed in his great work. All this is, however, conjecture for the present, but the dates agree with it in a remarkable manner.

WM. BROCKBANK.

Brockhurst, Didsbury.

ORNAMENTAL WALL PLANTS.

Now that the busy planting season is again rapidly approaching, if not, indeed, already upon us, a few remarks regarding the above useful class of plants may not be out of place. The list of climbers or plants suitable for wall covering is usually considered a very small one indeed, and this is no doubt the case if we confine ourselves to the dozen or so offered in nursery lists, or to the still more misleading notes of those who cannot get beyond the idea of the Clematis and Ivy. In the following notes I, however, intend to deviate from the already well-worn list of plants usually recommended for wall covering, and to briefly describe some half dozen of those which can be thoroughly recommended as being in every sense of the word adapted for this purpose. First on the list I would place

THE MAIDEN-HAIR TREE (*Salisburia adiantifolia*), which, although deciduous, is one of the most ornamental coverings for a bare wall with which I am acquainted. In my mind's eye I am at present depicting an oft-frequented flower garden, where a 4-yard high wall is covered from top to bottom and for a length of 20 feet with this graceful and distinct plant, than which one more conspicuous or beautiful it would be difficult to imagine. The glossy green, fan-shaped leaves, cut up like some of the species of *Adiantum*, give to the plant a most conspicuous and remarkable appearance. As a wall plant the *Salisburia* requires regular and heavy pruning, which, however, it bears with impunity; indeed, it is greatly improved thereby. The plant just referred to has a northern aspect, and is growing in ordinary loam, the surface of which is occasionally enriched by a dressing of leaf-mould or decayed vegetable refuse. Equally serviceable as a wall plant, and but little inferior to the latter in point of beauty, is that useful, though much-neglected plant,

GARRYA ELLIPTICA. This is a capital shrub, possessing a quick, dense growth, and admirably adapted for covering large breadths of bare dead walls. The dark, Holly-like foliage and abundant racemes of long drooping flowers render this plant one of the most conspicuous, if not ornamental, that we can remember having seen used as a wall coverer. Like the Maiden-hair tree, it is by no means averse to pruning, which, for the sake of flowering, and in order to produce a close, even surface, should be oft resorted to. Any soil of moderately good quality will be found suitable for the Garrya, and the position in which I have noticed it most at home is covering a wall with either a southern or western aspect.

MAGNOLIA GRANDIFLORA is another wall plant of considerable merit, and one which for a bold, majestic appearance, combined with beauty of bloom, has but few equals. Being somewhat tender, it should be allotted the southern; and consequently warm, side of a wall or building, where also extra temptation is offered for the perfecting of its large pure white and deliciously scented flowers. The leaves, which are persistent and from 8 inches to 10 inches in length, very nearly resemble those of our common Laurel, though of course on a larger scale. They are ferruginous beneath and of a bright shining green above. It succeeds well as a wall plant here, although, owing to our damp climate, the flowers, which are usually produced pretty freely, seldom expand in a satisfactory manner. This tree is a native of North America, where it usually attains a height of about 70 feet, although in this country it rarely reaches more than half that size. With

THE EUONYMUS as a dwarf shrub or plant for a window-box or pot we are all familiar, but as a wall plant it is not nearly so common as it deserves to be. There are at least three forms or varieties of the *Euonymus* all well worth attention, viz., *E. radicans*, *E. radicans aureus variegatus*, and *E. radicans argenteus variegatus*. These I have seen appropriately used as plants for wall-covering, but in every respect the silver form is the best. When seen in luxuriant growth, this lovely plant almost defies description, there being something peculiarly soft and pleasing in its bright, clean

foliage. The contrast between this and the other wall plants just recommended is also very striking, the sombre green of the one and the bright, distinct variegation of the other being very marked. A little difficulty may at first be experienced in getting this plant to grow upwards, it having usually a rather procumbent habit, but when once started it will grow at an amazing rate and soon cover a large surface of wall. For planting in the smoky atmosphere of a town garden the *Euonymus* is about the best shrub that can be used. It grows freely even under the most adverse circumstances, stands smoke well, and thrives under bushes and trees; even in the shade of houses and dark corners it is as healthy and looks as happy as when planted in the most favourable situation—facts which deserve wide circulation, as there is any demand for plants suitable for such positions. Where other shrubs have failed under such conditions, I would recommend those interested in such matters to give the *Euonymus* a fair trial; the results will be anything but disappointing. For planting in maritime situations it is also invaluable, as it is certainly by far the most weather-proof of the limited number of shrubs able to withstand the full force of the sea breeze, and contrasts strangely with the bruised and weather-beaten foliage of almost any tree or shrub that dares to rear its head even a few feet above the ground. The *Euonymus* is perfectly hardy, readily propagated, and a plant that is by no means fastidious about soil.

CEANOTHUS DENTATUS and *C. d. rigidus* grandiflorus, though perhaps better known than any of the other plants just mentioned, might be largely used as wall plants, both having many qualities to recommend them for that purpose. Though perhaps not perfectly hardy, it is only during very severe winters and when growing in exposed situations that they suffer at all from frost. These *Ceanothuses* are well adapted for training to a wall or wooden fence, against which they spread rapidly and bloom profusely. In a compost of good rich loam with an addition of peat or leaf-mould they grow freely, and if suitably situated the young wood becomes well matured during summer and passes through the winter unharmed. *Ceanothuses* may be made to bloom more freely by attending to cutting back the leading shoots in February, not in a stiff and formal manner, but so as to produce an open and elegant appearance. The variety *rigidus grandiflorus* has the leaves as it were turned back at the edges, a circumstance which gives the whole plant a stiff and by no means pleasant appearance. It is, however, a most profuse bloomer.

THE WISTARIA SINENSIS as a free-flowering wall plant has few equals, and deserves extensive cultivation, more especially where ample room can be afforded for its extension. Being of free growth, it soon covers a considerable space if each season's growth is allowed to grow its full length. This may be permitted until such time as the desired space is covered, but afterwards the flowering is much enhanced by a free use of the pruning knife. When pruned in winter the shoots should be made moderately short, which will induce the formation of breast-wood; this in its turn should be cut back to a couple of eyes the first season and kept closely spurred in afterwards. These spurs will produce an abundance of flowers. The *Wistaria* is perfectly hardy, and quite at home in any position or aspect. It is readily propagated by means of cuttings made of the ripe one-year-old shoots, which should be cut into 9-inch lengths and inserted in sandy loam in a cool frame. It is also frequently increased by layering, but cuttings form the best plants. Another plant of undoubted merit for wall covering is

CRATEGUS PYRACANTHA. What can be more beautiful than the rich, brilliant berries of this plant during autumn and early winter? So effective are these, that a single plant well covered with ripe fruit is an ornament to the village or street in which it grows. It is also capable of accommodating itself to a great variety of soils and situations; indeed, under the most unfavourable circumstances it seems to fruit most freely. The

Pyracantha should receive an annual pruning in March, which not only induces flowering, but also a close, compact habit of growth. Various species of

ARISTOLOCHIAS are recommended as wall plants, but amongst them the Birthwort (*A. Siphon*) certainly bears the palm. It is perfectly hardy, having stood unharmed during our most severe winters. It is a rapid grower, and, from its large leaves, one of the most conspicuous coverings for a wall that can be imagined. The flowers, which resemble a siphon, are small and inconspicuous, although of peculiar construction, and always hidden beneath the foliage. It is rather difficult to propagate, but cuttings of it inserted in loam and silver sand and placed under glass generally do well. Before bringing this list to a close I would like to add a word in favour of

THE BANKSIAN ROSES—white and yellow—these being plants which, with a minimum of attention, will be found both desirable and beautiful for wall covering. Once thoroughly established in a favourable soil and situation, they grow apace and bloom profusely. No better covering for a wall can be found than these Banksian Roses, which, even when out of bloom, are by no means unattractive. At Glyn-y-garth, on the Menai Straits, there is one of the finest specimens of this Rose I have yet seen. It covers an almost perpendicular rock for over 30 feet in height and 18 feet in width. When in full bloom during summer this is an object of general admiration, its clusters of small yellow Roses being produced in rich profusion.

A. D. WEBSTER.

Penrhyn Castle, North Wales.

AURICULAS.

I THINK I know "J. M." as an Auricula grower, and have had the pleasure of meeting him. If so, I feel sure he will not imagine that I take up his communication of October 18 out of a wanton spirit of opposition. An Auricula competent to win in a fifth prize collection is not necessarily a first-rate sort; and where this is the highest that can be said for Colonel Champneys so far back as 1882, I think the faintness of the praise is significant, and lowers its worth. The pace is quick to the Auricula in these days. It has developed most encouragingly and most beautifully under the nurture of recent years; and whatever the variety Colonel Champneys was to the florist world at the period of its first appearance, it is relatively nothing now as a classic Auricula. It has been surpassed in its sub-class by Simonite's Frank, and that again by his Aurora, while higher yet stands Heather Bell, and another of his more lovely still, whose existence now is but a memory, like the name it bore; till it seems a long line back to old Bonny Lass of Ashton's, an antique, pale-eyed beauty in blue and silver, not forgotten by old florists and little known to new.

The descriptions of Colonel Champneys by Mr. Tymons and "Delta" are correct (October 4), and that given of the flower in the list of 280 sorts is a too flattering tale. It ought not to be necessary to explain to anyone conversant with the Auricula that when the term blue is technically used of a ground colour in this flower, it is never supposed to be the blue of the Lobelia, Salvia, or Forget-me-not. It is a blue by brevet rank. The blues of the Gentians are hues to only dream about and hope for in the Auricula as yet; meanwhile, the approaches are the realities in which we live and work at present. So, flowers like Maria in the edges and Perry in the selfs are the old-fashioned blue ground flowers, and they are far behind the seedlings that are to come forward among the blues. I cannot but say that "J. M." would drag us far behind the day, if with him we would "regard the idea of discarding from any collection all sorts but those cracks which are only grown to take prizes as thoroughly wrong." I do not know a raiser whose practice agrees with that "as-you-were" policy; the flower itself forbids it. The cracks that can take prizes are just the purest, brightest, smoothest, richest of the flowers. We could not, if we would, keep touch with feebler

character and properties and attributes in fogs of undevelopment. Nay; every year, to my fancy, some of our florists' flowers seem to say: "You can do without me now; my day is past, and my help given towards the brighter future." And so they go—not with a thankless and unkind dismissal, but from the feeling that practically it is too great a stretch to stand metaphorically with one leg on the lowest and the other on the last-gained round of the long ladder of improvement. Where some old favourite is with us still, it is less as a flower than as some cherished help that keeps old memories green. I would state as a matter of fact that there are none of the "old cracks" now missing at exhibitions which are not beaten by younger sorts superior. New varieties are valued not for their similitude, but for their superiority to old ones; and a new flower, no better than a commonplace old one, is not sought or valued more. Invisible greens now are Freedom, with its brilliance, but angularity, and Champion, with the beauty, but transience of its velvety ground colour; and yet they are not the best green edges in existence; neither are Colonel Taylor and Prince of Greens that do appear. In grey edges, Hero and Lightbody remain the strength of the old flowers, and can beat all of those that appear less; yet they themselves have not always stood unbeaten, and when anything like such a stock as there is of these can be obtained of young varieties, yet within small compass, the progress that is accomplished will be made more fairly manifest. In the white edges, also, none of the old kinds, whether seen or not seen at the shows, remain unconquerable; there are whiter edges, rounder petals, purer grounds, and greater steadfastness of character. As for the lovely class of the selfs, old flowers are over-passed, and among the youngest beauties are some of the most fresh and winning types of loveliness. It is so with all the flowers, whether in the foreground or the back, with the acquisition of which there ended the work of such florists as Lightbody, Headley, Hepworth, Traill, and Campbell. The work of us who labour now will doubtless also leave its mark and have its bound, which others will again surpass, ploughing with our heifers. Last of all to be cast down or envious are those that have the work in hand. Our wish is that it should not perish, but be taken up.

I am sorry to disagree quite near the close of "J. M.'s" remarks with what he says—"that if only the competitors at shows would grow some of the old favourites as well as they do the new, success with the judges would be equally great." I, for one, have grown old and new with equal care, but under equal care the greatest part of the old varieties have proved of unequal or inferior merit, and that is why I cannot consistently, with the end I have had in view, occupy space and time with what is not more beautiful, and not so helpful, nor so interesting, as the fresh and higher results that are vouchsafed to the fascinating pursuit of cultivating a florist flower from seed.

F. D. HORNER.

Burton-in-Lonsdale, Yorkshire.

THICK AND THIN PLANTING.

It appears to me that in the planting of flower beds and in massing plants generally we are slow to acknowledge the merits of thin planting and the superior results to be obtained therefrom. I have in view more particularly beds of Pelargoniums, Verbenas, &c. These are, in nine cases out of ten, planted as thick again as they should be; but it will be said we must have masses of flower, and this cannot be obtained by thin planting. That I grant up to a certain point, but then it must be conceded that the thick planter loses individuality and power of natural development. By it we perhaps get a larger number of blossoms on a given space, but they must be proportionately weak and ineffective. I have been noticing Pelargoniums in masses and planted singly, and I find that those with ample room in which to develop their side growths have the largest trusses of flowers, the individual parts of the blossoms are stouter, and they have come through a gale of

wind and rain with very little injury; whereas the blooms of most of those in masses have been washed away or beaten into black masses. This is no more than what might reasonably have been expected, as we all know that overcrowding has a tendency to weaken all the parts of plants subjected to it—a fact which should enter into our calculations at planting time. The prevailing opinion that pure earth between plants is objectionable is not always justified by results. I feel satisfied that we should secure more stability in our bedding plants if we gave them more room. In more ways than one it is a mistaken notion to suppose that a few bare spaces at planting time is wrong. Thin planting increases the number and strength of the roots, from which a decided gain is derived. Therefore, all things point to the conclusion that results more satisfactory would be obtained than those we now get by allowing all naturally strong growing plants sufficient room in which to properly develop themselves.

J. C. C.

Solanum jasminoides as a wall plant.

—Among the wall climbers at Ightham Mote, we were pleased to see this plant, better known as a greenhouse climber. Those hoary old walls were covered with every graceful climber, old and new, that one remembered; and among them, high up in a corner, were the pale, elegant trusses of this fine plant, well worth the attention of those who wish for beautiful wall plants on their houses if they have no old or nicely coloured walls. We do not know how far north it may be trusted to do as a wall plant; but that it will do in the warm southern mild districts is clear.

The Canary creeper.—The prettiest mid-October picture we have seen this year in a garden was on the porch of the Crown Point Inn, on the road between Sevenoaks and Ightham. It was completely covered with the old Canary creeper, which wandered off the porch among the Cherry and Plum trees on the house. English cottage gardens contain many pretty examples like it; but we never saw quite so effective a one as this. Those who are fond of their gardens, and who live in them in autumn, should take care to give the Canary creeper a place, and some work to do. It is so fresh and graceful when so many things begin to fade.—*Field*.

Daffodils abroad.—I am more than an octogenarian, and from early boyhood have been fond of gardening. I, therefore, constantly peruse your most useful publication—THE GARDEN—and in it I see an inquiry concerning Daffodils. Though so much thought of in England, they are rather neglected in our gardens, in which they grow almost wild; here we do ample justice to Hyacinths, Tulips, Violets, Lily of the Valley, and to all the tribe of spring blooming plants, but Narcissi are seldom honoured with admission into first-rate nosegays. The kinds commonly seen here are the yellow and the white single and double varieties of Daffodils and the poeticus—that is to say, the one with a red circle in the chalice. Narcissi are met naturally growing on our mountains, as represented in the beautiful book on the wild flowers of Switzerland.—THE GARDENER, *Villa Taverna, Lake of Como*.

Lily failure.—In my own mind I have associated the blackening of the leaves of Lilies to some disease analogous to that which has attacked the Hollyhock, because it is only within the past five years that our Lilies have been affected. I have tried deep and shallow planting, but the result is the same in both cases, and as yet I am not sufficiently convinced as to the effect that dry and wet summers have upon the failure, but I rather incline to the opinion that a wet summer favours the spread of the disease, if disease it be. I may add that the healthiest and best flowered clumps of Lilies that I have seen for these past two seasons are where the soil is poor and brashy. The bulbs in the case which I have in my mind's eye have almost pushed themselves out of the soil, and are lying on their sides with the roots fixed in the ground. Than these no Lilies could thrive

or flower better, and, looking at the nature of the material in which they are growing, I should say that a rich soil is unnecessary for them, and that the bulbs should be planted near the surface.—J. C. C.

Leaf gardening.—Notwithstanding that THE GARDEN does not look favourably on carpet-bedding, we have no flowers in our garden at the present time (the middle of October) that can compare with a carpet bed of large size, containing about 3000 plants, consisting of *Alternantheras* in variety, *Mesembryanthemum cordifolium* variegatum, *Leucophyton Browni*, *Kleinia*, *Golden Feather*, and *Echeveria secunda glauca*. This bed has not been brighter, if so bright, all the summer as it is now. The subdued light of an autumn day appears to bring out the colours more distinctly than when the light is stronger.—J. C. C.

Tall Lobelias.—Notwithstanding the fact that all the tall *Lobelias* without exception require a slight protection during severe winters, unless in sheltered nooks, the trouble is amply repaid in such seasons as the present by the display which these truly handsome plants make all through the autumn months. *L. splendens* and its varieties *grandiflora*, *ignea*, and many others, are appreciated, but *L. Tupa*, a plant no less handsome, is comparatively seldom seen in good condition, even in places in which hardy plants are made a speciality. In the herbaceous ground at Kew, where the soil is evidently light and sandy, a plant nearly 2 yards through, with flowering stems 7 feet high, has been in bloom for the last two months. This plant has been in the same position for two or three years, protected in winter simply by a small conical heap of ashes. The flowers, which are borne in abundance, cover about 2 feet of the flower-stalk, and are a bright scarlet, the woolly leaves being also very pretty.—K.

Red autumn-flowering Sage.—With the exception of *Salvia coccinea* and *S. porphyrantha*, neither of which are hardy, none of the *Salvias* are so handsome as *S. involucrata* or red autumn-flowering Sage. Against a wall at Kew it has stood the test of the last five or six winters without protection, and that, too, in a very cold position, but even in the open border, where it has been for two years, it is now throwing up spikes of beautiful flowers with remarkable freedom. It is probably the moisture lying at the roots more than actual cold that destroys many of our reputed tender plants in winter. In the present instance success is attributed to thorough drainage directly under the plant. In the open border it grows from 3 feet to 5 feet in height, and the flower-spikes, which are a little behind those of *S. Bethelli*, of which it is the type, are very handsome, and produced freely; the leaves, too, are of a beautiful light, soft green veined with purple. It may be easily increased by cuttings taken off now or in spring, when it begins to grow.—K.

Cheap bulbs.—About this time every year local auctioneers have generally large quantities of *Hyacinths*, *Tulips*, and other bulbs consigned to them for disposal, and small growers, especially those with light purses, are thus afforded an opportunity of securing a large amount of bulbs at less than wholesale prices, but this is all that can be said in favour of the matter, for the bulbs, as a rule, are not third-rate in quality, and there is no faith to be placed in their being true to name. A single red *Lady Palmerston* of the auctioneer may ultimately become a double blue *Garrick*, or an early-flowering white *Princess Beatrice*, a late yellow *Duc de Malakoff*. The same thing is also liable to occur in the case of *Tulips* and other bulbs. Indeed, I have known some who have bought for *Tulips* bulbs what were not *Tulips* at all, but *Ranunculuses* or something of that sort, and bulbs of *Lilium auratum* at 1s. each have proved to be those of the common *grinum*. It is this uncertainty of getting anything true to name which makes dealings at little auction sales so unsatisfactory, and there is another important reason why I do not approve of them, and that is, that as a rule they are simply mediums for the disposal of bulbs of the most inferior description,

and although they may often be bought at what is considered a cheap rate, they are really not so in the end. They are certainly better than none at all, and may be acceptable to those who positively cannot afford to buy good bulbs, but I am sure people with money who go to such places for their bulbs make a mistake.—CAMBRIAN.

Helianthus orgyalis is one of the most beautiful of Sunflowers. Tied up in the conventional fashion prevalent in many gardens, the flower-heads being crowded out of all form and the stem leaves crushed out of character, there is nothing striking about it, but as seen in the collection at Kew at the present time untied and natural, the effect produced by it leaves nothing to be desired. The flower-stems hang or bend in long graceful curves, at once suggesting isolation or a dark background. Blooming in autumn, it comes in usefully for a mixed shrubbery or for clumps near woodland walks. In good situations it is seldom less than from 10 feet to 12 feet in height, and except as regards the much more crowded leaves, which are also longer and narrower, it resembles *H. angustifolius*, another useful plant, which, unfortunately, is hardly hardy, while *H. orgyalis* is not in the least affected by severe weather. The flowers, which are orange-yellow, are about the size of a florin and very effective.—K.

Lantanas.—It was a happy thought on the part of "B." (p. 312) to call *Lantanas* shrubby *Verbenas*, as the trusses of flowers greatly resemble those of *Verbenas*; but the *Lantanas* have advantages over *Verbenas* in being more compact and in affording so many different colours, besides which they stand the weather better, and are, therefore, more valuable for bedding or planting out in borders. We have a yellow and a white which we much prize, as the former takes the place of *Calceolarias*, and the white forms a pleasing contrast when associated with blues or scarlets, and the hotter the weather the better they do. Years ago when in the west of England we had *Lantana Sellowiana*, which was a very compact kind, neat in habit, and having flowers of bright lilac that looked well in a bed. Since then I have tried to get the same variety, but I fear it is lost to cultivation, as I cannot find its name in nurserymen's lists. The way in which we manage our *Lantanas* is to winter some of the old plants on the back shelf of a greenhouse, where they are kept dry, or nearly so. Early in spring they are placed in heat to induce them to make shoots for cuttings. The latter when taken off strike freely, and soon make good-sized plants ready for bedding. *Lantanas* are also very useful for pot culture, for which purpose old plants should be kept, as they bloom best, the tendency of young ones being to make too much wood when grown under glass.—S. D.

***Veronicas* as seaside plants.**—I find the New Zealand *Veronicas* to be most useful for exposed gardens on the coast; they even seem to enjoy rough gales that destroy more tender plants. *Andersoni* is now in lovely blossom, and helps considerably to maintain the fast declining beauty of the flower garden. In this locality *Veronicas* seldom suffer from frost, and being vigorous rooters and growers they soon form large shrubs. Young plants of them put out in spring are now sturdy bushes, and as they can be lifted and transferred to pots without injury, they are most useful for indoor decoration. Older plants supply plenty of flowers for cutting, a purpose for which they are well adapted, as blue and purple flowers are not usually too plentiful. For pot plants the best plan is to insert some cuttings at this time of year, and keep them under glass until spring, potting them off as soon as the days lengthen and pinching out the points of the leading shoots in order to promote a bushy, well-furnished base; gradually harden them off, and plant them out in May, they will need little further attention until ready for lifting in autumn. They are very little affected by insect pests, and I may mention that the variegated form of *Andersoni*, in addition to its other merits, makes a capital edging plant for beds or borders, being one of the best variegated

plants in cultivation, and, moreover, being nearly hardy, one which commends itself to those having limited glass accommodation for storing tender plants. It may be safely wintered along with *Calceolarias* and other half-hardy plants.—J. GROOM, Gosport.

THE CHINESE OR INDIAN PINK.

THE difference between this Pink as first introduced more than a century and a half ago and *Dianthus Heddeewigi laciniatus* and its varieties is very great indeed, and shows how plants change in form under cultivation. These Pinks, when treated simply as annuals, though they are of biennial, and probably in many cases of perennial, duration, produce their best coloured and largest flowers the first season; indeed, it is only a matter of sowing seed at two or three different times to have these charming plants in flower all the year round. When grouped in large beds of light, rich, sandy soil, in a warm, but slightly exposed situation, they are seen to greater advantage than when grown singly or in small patches in the mixed border. *D. chinensis* (represented in the annexed cut) is the type or parent of all this group. Of *D. Heddeewigi* there are many finely coloured varieties; of these some have graceful,



Dianthus chinensis

flowing, jagged edges like a much exaggerated *D. superbus* or *fimbriatus*, and range in colour from pure white to deep crimson and maroon. They are also both single and double, the former often attaining 4 inches in diameter, and a perfect maze as regards colour. *D. H. atro-purpureus* is a new and beautiful kind well worth attention; it has double, dark purple flowers. The double *atro-sanguineus* Eastern Queen, *Crimson Beauty*, and many others are also good kinds. *H. laciniatus*, one of the most extreme forms, is a trailing plant and exquisitely beautiful. Its flowers are nearly 4 inches in diameter, and vary from white and pink to crimson, variously marked and blotched with pretty protruding styles, and possessing beautifully fringed edges. *D. striatus multiflorus* is likewise a pretty pink-striped variety, and very interesting. These Pinks may be easily propagated from cuttings put in in the ordinary way, or by layering, but I prefer raising them from seed sown where they are intended to remain. It may be put in early in spring, about midsummer, and again in August. K.

Lithospermum prostratum.—With us this grows most freely; we have a plant of it more than a yard across and so dense as to quite hide the ground over which it runs, and lies close, sending up its fine twiggy shoots abundantly, and flowering profusely for several months in the year. The situation is in full sunshine, and

though some peat was given to start the plant with, the roots must long since have got through that and into the clay below, which may account for its fine health and vigour and the way in which it endures dry weather, as it never gets water or other attention beyond keeping it clean. As to propagation, we often find some of the slender branches self-layered and rooted, and cuttings taken off and put in under handlights in sandy soil, where they can have natural shade, like that of a wall, root readily, although they sometimes take a long time to do so. When once established they transplant badly, and therefore should not be moved if it can be avoided. Even young plants should be potted first, in order that they may be kept close for a week or two to give them a start. Where *Lithospermums* show themselves off best is trailing over rocks or elevated ground, positions for which they are specially adapted. There they exhibit their lovely deep blue flowers to advantage, and look quite at home along with such things as *Arabis*, *Phlox Nelsoni*, and similar plants.—S. D.

SEASONABLE WORK.

FLOWER GARDEN.

FLOWER beds should now be cleared of all plants that will not withstand frost. *Dahlias*, *Begonias*, and other tuberous-rooted plants should be placed in safe quarters—a cool shed—and the roots laid in dry vegetable soil, in sand, or Cocoa fibre, there to remain till February. The beds should then be replanted for the winter, either with bulbs and spring flowering plants and annuals, or else with evergreen shrubs. *Violas* and *Pansies* may remain, for with mild weather they will flower more or less the winter through, so that all that is needed to furnish these kinds for beds for the winter are a few small shrubs, such as *Cupressus*, *Retinosporas*, or *Aucubas*; they should be planted at regular intervals over the beds, the *Violas* serving as a groundwork, into which may advantageously be dibbled a few *Tulips* or *Hyacinths* for early spring flowering. Other beds may be treated in like manner, as, for instance, those that have been carpeted with hardy plants of the *Sedum* type. Do not remove this, but plant in it *Stocks*, *Wallflowers*, *Forget-me-nots*, &c., as well as suitable shrubs in the larger and more conspicuous positions. By this means the work of re-furnishing will not only be less, but the beds will look well at once. We need hardly add that the edgings of beds ought to be neatly trimmed, and bare spots of earth be mulched with fine vegetable mould or fibre. This done, an occasional sweep up and rolling of turf will be all the attention the parterre will need for months to come.

MIXED FLOWER BORDERS.—There is at present a look of untidiness about these which must be remedied. *Chrysanthemums* need tying up, and some of the clumps may be worth protecting from frost, which is easily done by placing a few sticks round the plants and lightly wrapping round them pieces of tiffany or matting. Other plants, such as *Antirrhinums*, *Michaelmas Daisies*, and *Anemones* that have done flowering should be relieved of useless spray and seed-pods. Annuals should be encouraged to make sturdy growth by being well thinned out, and the entire surface of the border should be freed from weeds and be lightly pointed over, but previous to that all vacant spots should be filled up with any spare biennials or bulbs there may be left from the general planting.

GENERAL WORK—The due preservation of neatness must have first place under this heading, and next comes the pressing forward alterations and improvements whilst the weather continues open, and therefore favourable to all transplanting operations; but under no circumstances should planting be done when the soil is in a puddled condition. Bedding plants now need careful treatment to keep them in good health. All kinds should be watered but sparingly—*Pelargoniums* more particularly so, or the late struck plants that have as yet made little root will quickly rot off.

Verbenas, *Petunias*, *Ageratums*, and others of similar hardness should be kept as cool as possible; cold pits that can be well covered in the event of frost are the best structures for these. Prepare protection in the way of litter or Bracken for protecting plants that are being wintered in ordinary cold frames. Of course this need be applied only in exceptionally severe weather, as the coverings with ordinary mats will suffice at other times.

FLORAL DECORATIONS.

FOR using in many ways the autumn-flowering varieties of *Salvia* will now prove valuable. *S. splendens* is still one of the best of its colour and very floriferous. *S. Bethelli* is also a fine variety of a purplish shade. These, with one or two more distinct colours, will at all times make an excellent arrangement for the dinner-table, being careful to preserve at least some of their own foliage intact. Medium-sized *epergnes*, with either a trumpet-shaped glass or one more dish-shaped, will do excellently for these flowers, their colours contrasting well with that of the silver and other surroundings of a dinner-table. Some Fern fronds of any approved kind will add to the effect, or in lieu thereof the elegant foliage of the cut-leaved *Bramble* and a few pieces of one of the ornamental Grasses can be turned to good account. Another valuable class of plants at this dull season of the year are the *Gesneras*; for tall trumpet vases the spikes of these, when well developed, are excellent. The old *G. zebrina* is especially telling when used in this way; its own foliage, which is always handsome when the plants can be kept in good health, will be quite sufficient to show off the flowers to good advantage. The handsome blossoms of the *Belladonna Lily* will also be valuable just now for arranging in many ways. The individual flowers can be used in association with those of the *Amazonian Lily* for a dinner-table arrangement, selecting a glass stand with a flat base resting on a table-cloth, and a trumpet-shaped glass arising out of its centre. Around the stem of this a few blossoms of the red and white *Lapagerias* and some small growths of these climbers might be entwined with good effect. In the glass itself two or three nice feathery pieces of the red and yellow varieties of *Celosia pyramidalis* and a few spikes of dried Grasses would make a pretty arrangement under artificial light. Some few healthy green tufts of either *Cyperus alternifolius* or *laxus* would look well with the *Lilies*, which should be resting on a carpet of green Moss or *Selaginella*, and there should be a fringing of Fern fronds of a somewhat bold character. Spikes of both of these *Lilies* cut to a good length and having several expanded flowers will also do well as a bold arrangement for either a sideboard or entrance hall. The foliage of the green variety of *Aspidistra* will associate well with them, and a leaf or two of *Amaryllis* *alulica* if to be spared. A small spike or more of the *Pampas Grass* towering above all would be effective. A dark blue, or even a black-coloured china vase might be selected for such an arrangement as this. *Camellias* in many places will now be yielding a fair quantity of their blooms; these will come in handy for specimen glasses. It is well, however, to take a precautionary measure with these to prevent them from dropping any of their petals prematurely. A little gum worked in between the outside petals will generally prevent this annoyance. Choice bits of *Orchids* should be made the most of for small glass vases, taking care that these do not stand too close to any window that is opened on chilly or windy days. If this be overlooked the blossoms will quickly fade.

INDOOR PLANTS.

CAMELLIAS.—One of the most disagreeable circumstances connected with gardening is that it is necessary to keep up a war with insects that never comes to an end. Plants in the open air, with a few exceptions, are little affected with animal parasites that hold on to them beyond a limited time during the year; but with those grown

under glass the conditions are wholly favourable to insects, which go on increasing more or less, according to the active or more dormant time of the year, and unless there is unremitted attention given to their destruction, the plants never can thrive or appear as they ought to do. The course sometimes followed of allowing plants to get badly infested, and then to subject them to extra cleansing, is the worst possible method, for not only is the work thereby much increased, but the plants themselves, beyond the harm done to them by the insects, have their leaves more or less injured by whatever means are employed in the cleansing process. Gardeners who keep the best ahead in the destruction of insects not only reduce the amount of labour to a minimum, but invariably reap more satisfactory results by the cleaner and better condition of their plants. The best season to attack the enemy is during the autumn and winter, when insects increase much more slowly, and the press of other matters gives more leisure for the work. *Camellias* more than most plants suffer through the presence of white scale, the most difficult of all insects to get rid of, for the reason that many of the plants subject to it will not bear the application of any insecticide sufficiently strong to destroy the pest without seriously injuring the foliage. When the plants are much infested it congregates about the extremities of the shoots and on the flower-buds; where the growth is vigorous, and the buds are set in clusters, it is well to thin them out sufficiently, so as to be better able to get at the scale. This thinning out is also essential to obtain full-sized flowers, for although the reduction of the buds is not necessary to be carried so far now that the blooms of these plants are generally gathered without any of the wood in the way that was long looked upon as essential, and consequently through the mutilation of the shoots they are enabled to develop more flowers; still, it is bad practice to allow too many. Some of the best of the market growers, who naturally are anxious to let as many remain as the plant can fully support, thin out the buds to two or, at most, three to a shoot. We have found nothing better to clean these plants with than an ordinary tooth-brush for removing the scale, finishing by sponging with ordinary soap and water. The strong application of soft soap not unfrequently used in the cleaning of many plants often does more harm than good, and in the case of *Camellias* causes numbers of the buds to drop, although this often occurs so long after the dressing as not to be attributed to the effects of the soap. If the plants are badly affected it will be well to go over them twice. With the damp weather we have recently had, necessitating a considerable use of fire heat in most conservatories to expel the vapour, it will be requisite to see well that the plants are sufficiently moist at the roots. This not alone applies to those that are grown in tubs or boxes, but also where planted out, the soil often being too dry below when the surface looks moist enough.

ORANGES AND CITRONS.—These are troublesome plants to deal with in the matter of scale, and now when transferred to their winter quarters should be thoroughly overhauled, so as to remove the pest, which in their case often establishes itself where there is the least inequality in the bark, as well as on the leaves, the young wood, and about the stalks of the fruit. These plants should never be allowed to get badly affected with scale, as it seldom fails to give a yellow sickly hue to the leaves, and causes their premature falling off, and so imparting a half-clothed appearance, which much reduces their beauty. Where *Oranges* are grown in numbers with a view to their fruit being used, they should have much more warmth than when only required for ordinary decoration, otherwise the fruit can neither be plentiful nor high flavoured. Bottom-heat is sometimes advised where the crop is required for use in this way, but it is not absolutely necessary. A genial warmth of about 55° in the night through the winter, with an atmosphere neither too dry nor too moist, will answer for them. By some the flowers are as much esteemed for their scent as *Violets*, and where this is the case

much may be done in lengthening the supply by introducing a plant or so at a time to a little more heat, as there is no particular season in which they cannot be had in bloom. Though smaller in the flowers, the small Otaheite variety is useful for blooming. There is one advantage with this sort; the plants not being large, a succession may be brought on to flower without the over-abundance at a time that often occurs where the large kinds are forced.

WINTER-FORCED FLOWERS.—LILY OF THE VALLEY.—Where this is wanted in bloom by Christmas there is no difficulty in having it, if strong, full-sized crowns are obtainable that have been cultivated under conditions such as to bring their growth to maturity early in the season. The German roots that are now sent to this country have been in this way especially prepared for forcing, so that when they arrive by the middle of October the crowns have already pushed a half inch or so. If these are at once potted, and allowed a week or two before putting them in strong bottom-heat, there is little doubt about their moving freely, and coming into flower during the latter part of December.

POINSETTIAS AND EUPHORBIA JACQUINIE-FLORA.—Poinsettias intended to come in early should now be subjected to a brisk stove heat, keeping their heads if possible all but touching the roof, by which means additional brilliancy of colour and a harder condition such as to enable their bearing a cooler temperature when fully expanded will be secured, very different to that which will result from their being brought into bloom with their heads several feet from the glass. Regarding the Euphorbia, the time it can be had in flower will depend upon how the plants have been treated. Cut-back examples, such as bloomed last season, that were started into growth sufficiently early in spring and pushed on in a warm house with the shoots not stopped more than once, will flower much earlier and produce double the quantity of bloom that such as are weaker and have made their growth later will. There is no plant that we have ever used for forcing that has the condition of its flowers so much dependent upon its being brought on to bloom with the tops of the shoots all but touching the glass as the Euphorbia. When so treated it will stand in a cut state for a week; whereas plants in a dark house or under less influence of light are of so little use for cutting, that both the leaves and flowers flag almost as soon as they are severed from the plants. Neither of the above plants will do well with the soil keeping so wet as many things; the comparatively few and delicate fibres which the Euphorbia especially makes cannot at any season bear the soil being wet, unless in very small well-drained pots, and under an exceptionally high temperature. Anyone possessing a large plant of the old Euphorbia splendens trained on a back wall, round a pillar, or in any situation where it will receive a moderately brisk heat through the winter, will have a continual succession of brilliant flowers. This plant likewise is impatient of much moisture in the soil unless the roots are confined within a restricted space. Even when allowed plenty of head room in the way above indicated, it is better kept in a comparatively small pot than turned out in a border.

ORCHIDS.

EAST INDIA HOUSE.—It will now be a good time to thoroughly overhaul the plants, and wash them well with soft soapy water. Those that are growing in pots should have these washed, and where the plants have been placed on inverted pots they also should be removed, and clean ones be put in their place. The best stages for an Orchid house are those made of slate with a neat cast-iron edging screwed on to them. Some gravel, spar, or broken sea shells may be placed on the stages to stand the plants upon. Another matter which demands attention is cleaning the glass roof. The wood and glass work should be well washed with clean rain water; a very little soap should be used, as strong soapy water has a tendency to take the paint off the wood. The import-

ance of a clear light at this season through clean glass is of much importance in any of the departments, but much more so in this one. We should not advise any potting of the inmates of this house until after Christmas, when the plants will succeed better with the lengthening days. The earliest ripened Dendrobiums should be placed in the coolest end of this house, and they ought also to be placed quite close to the glass, so that the young growths may be strengthened by the light and also by the more buoyant atmosphere. The growth of some species and varieties may even have started; in the cool, airy house where they have been at rest they will, of course, grow with more vigour when placed in the warm, moist atmosphere of this house. The Vanda teres and V. Hookeri, which have been grown in this house up till now, ought to be removed to the temperature of the Mexican house, and they should be placed where they will be fully exposed to the light. They must also be gradually dried off, so that from the middle of November until about the end of February they get no water whatever. Some of the Cypripediums that delight in a warm house should be carefully examined, as a section of them, notably C. Veitchi, are very liable to be attacked by thrips; and as the leaves cling so closely to the surface of the compost, it is not very easy to dip them. We usually go over them with a brush, dipping it into the soapy water, and then it is easy with the brush to get at the thrips in the centre of the plants. Lælia autumnalis and varieties of it in flower claim a high position; although usually grown in this house, we have grown L. autumnalis in the cool house, and find it succeeds well there. We have always given it and its near relative, L. majalis, the lightest corner in the house, and find the first named species succeeds well and flowers every year; whereas the latter scarcely grows and but seldom flowers. The Lælias are watered freely while making their growth, but during the resting season they do not receive nearly so much water. Lælia alba is one of the prettiest of the small-flowered species, and they are even more useful because they bloom now. We have always grown L. alba warmer than the others; it may not require more, but we find it succeeds well in a warmer house. L. anceps and varieties of it are highly valued in the winter, and are now showing.

COOL HOUSE.—The last night or two the temperature has fallen as low as 42°, and as it would not be safe to allow the temperature to fall lower than this, a little heat in the pipes will be necessary to keep up the temperature to 45°. It is worthy of remark that our cool Orchid house has not required any artificial heat from May until the end of October. Indeed, it is a question whether the New Grenadan Odontoglossums require more heat than the majority of New Zealand plants, which are cultivated in a cool greenhouse. At any rate, most Orchid growers give their plants more air now than was deemed advisable less than ten years ago, and the cool section may be aired more freely than the others. We have heard of plants of Odontoglossum crispum being placed near the open ventilators of a greenhouse, where they succeeded well, making good flowering growths with the ventilators open night and day. We have removed a few of the plants of some Orchids that flower best in a temperature of not less than 50° at night, and in mild weather this ought to be 55°. If the cool house is kept at 50° as a minimum, a temperature at which most of the occupants of the house will do well, there is no need to remove the white winter-flowering Masdevallia tovarensis, M. Wagneri, or the Restrepas; whereas if the temperature occasionally falls to 40°, it is better to remove them to the cool end of the Cattleya house. Odontoglossum vexillarium should also be in a Cattleya house temperature now; it does not like a high temperature, nor are the plants safe in a low cool house one. If a winter temperature of 55° as a minimum can be afforded them, it will suit better than any other. The handsome Oncidium macranthum succeeds well in the lowest temperature. In some cases the flower-spikes will be showing, and they

are very attractive to slugs; these troublesome pests may be found any time at night, and also at daybreak in the morning. A little caution is necessary in damping the house at this season, an over-moist atmosphere causing the flowers to spot almost as soon as they open.

PROPAGATING.

ABUTILONS.—These may be increased with equal facility either by seeds or by means of cuttings. The former are easily obtained, and to produce plants for winter blooming should be sown about April in pans of moderately light soil and placed in a warm greenhouse, in which they will soon germinate, but as many seedlings grow away very strongly before flowering for general purposes plants raised from cuttings are preferred. The cuttings may also be taken in April and inserted in pots of sandy soil without removing or shortening any of the leaves and placed in a close case in the propagating house or in a frame with a slight remaining bottom heat. There, if kept close and shaded, they will be rooted in a fortnight, when they may then be hardened off.

ACACIAS.—The smaller growing kinds, such as Drummondii and armata, are readily propagated from cuttings in this way. When the flowering season is over shorten back any irregular branches at which they will break forth into fresh growth, and when the new growth is moderately firm take off the cuttings. The pots should be filled to within 1 inch of their rims with broken crocks, over which must be placed the soil, consisting of sandy peat with a small proportion of loam, the whole being pressed down firmly. A little sand should be put on the top. About 2 inches will be found the best length for the cuttings, the leaves being carefully removed from the lower half. When inserted, the base of the cuttings will rest on the crocks, which for the top should be broken small, and care must be taken that it is made firm, or it will shrivel up. When the pot is filled with cuttings, place a bell-glass over them, and keep it in a greenhouse temperature well shaded for a few weeks until they callus, when they may be removed to more heat and will then quickly root. When rooted, which will be perceived by growth taking place, tilt the bell-glass and gradually harden them off.

ANTHURIUMS.—The Flamingo plant and its white variety are both readily increased by division in spring; all that is requisite is, if the roots have been very much disturbed, to keep them close until they recover from the check. Its ally, Anthurium Andreanum, is propagated by taking off the top of a plant when it has attained a sufficient length, and putting it in as a cutting in a small, well-drained pot. The soil best suited for this purpose is fibrous peat, Sphagnum, and sand. As soon as the side shoots produced after that operation are large enough, they may be taken off and treated in the same way. The cuttings must be kept in a close case in the stove till established in their pots.

BOUVARDIAS.—These beautiful winter-flowering plants are increased either by cuttings of the young growth taken in the spring, or, as preferred by some, root cuttings. For the former method, which is the one most generally followed, introduce the stock plants into a brisk heat about the middle of February, when they will grow rapidly, and as soon as the young and succulent growth has attained a length of 2 inches, take off the cuttings, not at a joint, but immediately above one, thus leaving a portion of bare stem below the bottom pair of leaves, which must on no account be removed. The cuttings must be inserted in light, sandy soil, taking care that the bottom leaves are not buried, but rest as it were on the surface. Thus treated and placed in a close case in the stove, they will root in a fortnight, when they must be hardened off. For root propagation shake out the old plants early in spring, and cut up all the principal roots in pieces about 1 inch in length, inserting them perpendicularly as cuttings, so that the upper part is on a level with the soil; treat them in all respects the same as cuttings made of the shoots.

FRUIT.

CHERRIES.—Where these are wanted very early, the first set of trees may now be pruned and cleansed ready for tying in when opportunity serves. As these and Plums are often injured by a sudden outbreak of aphid when the trees are in flower, too much attention cannot be devoted to the washing and dressing of the stems and spurs, care being taken that the insecticide used is not strong enough to injure the buds. If, as is generally the case, these excitable trees have the benefit of a movable roof, the lights should be thoroughly washed, or, what is almost as cheap, painted inside at least before they are put on for the winter. Vigorous young trees which have been partially lifted or root-pruned will not require mulching or stimulating until after the fruit is set, but the borders occupied by the roots of old ones may be covered with a good layer of rotten manure as soon as they are tied, and to prevent the buds from dropping, an occasional soaking with diluted liquid will be highly beneficial to these, as it is to all other kinds of stone fruit trees when grown under glass. When all is finished the house must be kept well ventilated and as cool as possible until the time arrives for forcing. If trees in pots are still standing out in their autumn quarters they may be placed closer together and well packed with Fern or litter to keep out frost. Where birds are numerous a piece of fishing-net should be thrown over them to protect the blossom buds when they begin to swell.

STRAWBERRIES IN POTS.—The rainfall of the past week or two, combined with mild weather, has kept the plants growing rather more freely than is good for them, as it is now getting late for them to ripen up their crowns properly. Much, however, may be done to facilitate this process by moving the pots occasionally to let in light and air, and to prevent the roots from penetrating into the bed of ashes upon which they are placed. If forward batches of early kinds are wanted for starting, a more decided check may be given to vegetation by placing them on their sides, or setting the pots in cold pits where the lights can be pushed down and tilted in wet weather. As the general stock will continue growing for a considerable time yet, they may with advantage remain out-of-doors until severe weather approaches, when they must be placed in their winter quarters until wanted for forcing. When thoroughly at rest pot-plants should not be allowed to become dry at the roots; neither should they be coddled by being kept in a close pit when the weather is mild. In our own management we prefer leaving all the plants out-of-doors until the middle of November, when they are removed to cold pits, and plunged up to or slightly over the rims in Oak leaves or tan, for the two-fold purpose of keeping the roots moist and the protection of the pots from the action of frost. The lights are thrown off in fine weather, and well tilted to shelter them from heavy rains. No attempt is made to keep out ordinary frost, as decided rest is highly important; but a thin layer of dry Fern is spread over the crowns when it is unusually severe. When Strawberry plants are wintered in houses they should be placed close together on a cool, damp floor in preference to elevating them on shelves.

CUCUMBERS.—If plants in manure pits and frames are still giving a supply equal to the demand, keep September-sown plants divested of all male and female blossoms, and train the young growths regularly over the wires. Add more lumps of turfy loam to the roots as they appear on the surface of the hills or pots, but avoid the use of stimulants until they begin to bear fruit. Keep a sharp look-out for mildew, and check it at once by the application of dry sulphur to the leaves, renovation of the fermenting material, and the abundant use of water at a temperature equal to that of the soil containing the roots. Keep succession plants growing by shifting them on before they become pot-bound if the pit in which they are to be planted is not ready for them. Never bury the stems of winter plants, as deep potting or heavy earthing is the frequent cause of their

going off before the inexperienced are aware of their danger; but in potting or planting always keep the top of the ball near the surface, and coax the roots away into feeding ground some distance away from the stems. Where old veterans are still doing good service keep them copiously supplied with good warm, generous liquid, mulch the balls with short stable manure, and encourage an extension growth by allowing a number of the most promising vines to ramble over any unoccupied part of the trellis. In every department keep the foliage free from insects by means of sponging or fumigating, and endeavour to maintain a healthy sturdy condition by internal cleanliness and the frequent removal of matter which may accumulate upon the glass, and so interfere with the passage of solar warmth and light.

KITCHEN GARDEN.

GLOBE ARTICHOKE.—Give these a good mulch with manure, and afterwards protect them with dead Bracken. February is the best time to make new plantations. Slipping off the offshoots from the parent plant is a much better system than growing them from seed. Digging, trenching, or manuring, as the case may be, all vacant quarters or borders after the crops are secured will be the order of the day. The time is fast approaching when Seakale, Asparagus, and Rhubarb will want looking to; Rhubarb, in fact, may be taken up now to force; it is quite ripe enough for that purpose. We gathered our first Mushrooms on October 26; they promise to be a good crop. Now is a capital time to plant Cauliflower plants under hand-lights, planting five under each light in a warm corner on a south border. In the case of Cauliflowers to plant out in March, we find by far the best plan is to plant them in small 3-inch pots. Keep them in cold frames, and expose them fully on all occasions except when there are heavy rains or sharp frosts. They get nice, stiff, and sturdy plants by March, and if turned carefully out of the pots, they never feel the effects of the shift.

WORK DONE IN WEEK ENDING OCT. 28, 1884.

OCTOBER 22.

THOUGH still very gay, circumstances being favourable to our commencing to dress the parterre in winter garb, all tender plants were taken up and a start made to substitute hardy plants. These notes do not admit of entering into details concerning planting other than simply recording that every plant of a tender character is cleared out, and that the vacancies made are filled up with hardy plants that best associate with the hardy kinds that have done duty during the summer, a leading feature in our summer arrangements being the use of hardy plants, mainly with a view of saving the labour of replacing the same at this season, when, as in our case, winter furnishing of every bed and vase is demanded just as much as it is in summer, and, I may add, far more appreciated, especially by visitors. We use small shrubs, Thymes, Veronicas, Sedums, Saxifrages, Stachys, hardy Heaths, bulbs, annuals, and other plants too numerous to mention, much more describe how arranged within the limits of these notes, but the curious, if so inclined, may, through the editor, obtain a permit to see for themselves. Potted Pelargoniums. Our best bedding kinds are, pink, Master Christine; scarlet, Vesuvius, John Gibbons, and Henri Jacoby; rose colour, Waltham Seedling; white variegated, Mary Queen; tricolored, Sophia Dumasque; and bronze, The Shah and Marshal McMahon. They are placed in warmth to start them, and will be shifted then into cold pits or vineries at rest. Tender succulents are being planted out in a pit that is heated with hot water. Our best kinds of these for bedding purposes are Echeveria metallica, E. farinosa, E. Peacocki, E. gibba, and E. glauca metallica, Kleinia tomentosa, K. repens, Sempervivum arboreum variegatum—the best of all for use as a standard succulent—S. canariense, and S. Donckelaari.

OCTOBER 23.

Planting the flower beds for the winter has been our principal labours to-day, and we get it done the more expeditiously by appointing one man to put in the plants, another to follow to complete the pressing and smoothing down the soil, and another to cover the surface with either Cocoa fibre refuse, Sedum, or Heather, as the various arrangements require, and another to remove all dirt, dead leaves, &c., from the ground-work plants of the summer, the finishing touch being a thorough washing of the whole by watering with a coarse rosed watering pot. Potting off plants continued. Standard Heliotropes and Abutilons that are always useful during the winter for conservatory and cut flowers purposes are put into strong heat till they get well hold of the fresh soil, and having no better place they are stood on the floors of the Pine pits, being regularly syringed and watered. The inconvenience and necessarily untidy appearance of thus housing them is a foregone conclusion, but necessity knows no choice. Busy as all such work makes us, Grapes still hanging on the Vines cannot be neglected in the matter of cutting out decayed berries, and all were done to-day, this splendid dry weather making such work very light indeed, whilst firing as a preventive of decay is all but unnecessary.

OCTOBER 24.

Still planting flower beds. I ought perhaps to mention that the beds nearest to and overlooked from the windows of the mansion are filled solely with plants that are most telling during the winter season only, the non-residence of the family in spring making it unnecessary to study appearances at that season, but beds in other parts of the garden are arranged for effectiveness in spring as well, and for this purpose bulbs, annuals, and spring-flowering perennials, as well as small shrubs, are used. Brompton and Queen Stocks, Silenes, Limnantes, Candytufts, and Arabis are now being planted, and others will presently be planted in the Rose beds as soon as the plants have been given their winter dressing of manure. Potting up of flower garden plants also continues. We are getting overcrowded, and therefore have to turn out the young stock plants into colder quarters till such times as other vineries are cleared of their fruit. I would like to say, however, that such inconvenience is not entirely caused by bedding plants, but also by the increased demand here, as elsewhere, there now is for cut flowers the winter through, the space the bedding plants use to fill being now occupied with Bouvardias, Primulas, Cinerarias, Begonias, Pelargoniums, Chrysanthemums, and other plants that were once grown by the unit are now required by the dozen. This increased demand for forced flowers, and consequent need of space to grow them, being one of several strong reasons for reducing tender summer bedding plants to the lowest possible point. It turned much colder this evening, and the remaining tender plants yet in the beds were covered over, and early Broccolis had their central leaves bent over the flower to prevent injury in case of frost. They are turning in much too rapidly, and the forwardest will be lifted in a day or two and heeled in under a north wall to lengthen out the supply, else there will be a break between these, the Penzance and the Protecting Broccoli, which are our next sorts.

OCTOBER 25.

Filled vase and basket beds with shrubs. The small Retinosporas are unique plants for small vases; the varieties plumosa, and plumosa aurea, and pisifera aurea are the best kinds for this purpose, and bear biennial removal very well. The soil we cover over with turves of Heather, which impart finish and neatness, and at the same time are protectors of injury from frost in severe weather. Large basket vases are being planted with Hollies, Mahonias, Cupressus, variegated Box, Portugal Laurels, Golden Yews, and other shrubs, the only summer plants remaining being the Phormiums, green, bronze, and variegated Bamboos and Yuccas. The edging plants are Cotoneaster, Japanese Honeysuckle, Ivies, variegated Periwinkles (Vin-

cas). The soil is surfaced with Cocoa fibre refuse, this brown colour making a very excellent setting for all the kinds of shrubs used. Planting of beds interfered with our cleaning up to-day, such only as was really necessary about the houses being done. The outside must wait, a matter of but little consequence just now, when the leaves are falling so rapidly. The fruit room was overhauled, every bit of decaying fruit removed, and all laid as thinly on the shelves as space would allow. The weather has been most favourable, and there has been little of sweating, and now that all is so dry, we shall endeavour to maintain that state; hence ventilators will be closed at night, and be kept so night and day whenever the atmosphere is charged with moisture. The Pears now in use are Marie Louise, Doyenné du Comice, Beurré Clairgeau, Conseiller de la Cour, and Pitmaston Duchess.

OCTOBER 27.

We had hoped to have finished planting the flower beds to day, but the rain of yesterday

but not in that precise "rule of thumb" form that some practise, simply because we have neither time nor patience for such precision of training, and as it does not affect the fruiting properties one way or other, we shall not adopt the "just so" style till we are quite worked out of other jobs, and at present there is no immediate prospect of that. Gathered more Dahlia seeds; also seeds of Sunflowers, Sweet Williams, and Sweet Peas. The new variety of the latter, named Princess Beatrice, is really a beautiful one; colour, light pink, and the flowers are large, lasting, and very sweet. This and the varieties Butterfly and Scarlet Invincible are a trio of unsurpassed beauties.

OCTOBER 28.

Completed the furnishing of parterre flower-beds for the winter, and, without boasting, I may say that the whole looks so well that few persons could help admiring the beds as now arranged, and which plan ought to be more generally adopted, more especially in gardens in the

SOCIETIES.

ROYAL HORTICULTURAL,

OCTOBER 28, 29, 30.

THIS was the last of the series of fruit and vegetable shows held in the conservatory at South Kensington, under the auspices of the Health Exhibition committee. The schedule on this occasion contained some thirty-six classes, twelve of which were set apart for Apples alone; therefore these constituted the principal part of the show; indeed the Apple exhibits entirely filled the centre of the conservatory, there being no fewer than 2000 dishes shown. No such exhibition of Apples has taken place since the great Apple congress held at Chiswick, notwithstanding the general complaint that the crop this season is much below the average. The compilers of the schedule evidently desired to bring together a representative exhibition of seasonable fruits and vegetables, for



Funkia Sieboldi, showing value of grouping as compared with dotting. (From a sketch by A. Parsons.)

hindered us getting on to the ground as soon as we otherwise would; however, we can well afford to compound the delay for the rain, as it was sadly wanted, and indeed still is before much transplanting work of shrubs and fruit trees can be done, or at any rate before it is desirable to do such work. Besides planting beds and doing the necessary clearing up connected with it, the turf edgings to beds have all been clipped, and the gravel walks swept hard with a whale-bone broom to get off slight coverings of Moss, and they are now ready for rolling as soon as there has been sufficient rain to admit of its being done effectively. Pruned early Peaches. The wood is hard and brown and the buds prominent; never saw them so fine. Summer pruning, or rather pinching and disbudding that we practise, rendered winter pruning a very light matter. Only badly placed and long naked shoots are taken out, but every branch is loosened from the trellis, and after washing both trellis and trees with a strong solution of soft soap or Gishurst Compound, the whole are again tied in neat form to the trellis,

immediate vicinity of the mansion. The labour and slightly additional expense for shrubs are as nothing in comparison with the satisfaction and pleasure there is of daily viewing a well-furnished garden, rather than the bare beds still far too common in many places that in other respects are models of good gardening. Potting flower garden plants. The tender kinds we stand about on the floors of the warmest houses till such times as room can be made for them by moving out less tender plants that have got established in the new soil. Housed Echeverias and Kleinias; they are wintered very thickly together in cold frames and give but little trouble, as they are planted out in light soil and need no removal till they are again required at bedding-out time. Lobelias of the cardinalis section and *Salvia patens* are being served precisely the same way. Cannas we heel in close together, in leaf-soil, in a dark shed, from which frost can be excluded; Dahlias we treat in the same manner, and then the roots do not shrivel, but keep plump and good.

HANTS.

prizes were even offered for such little used vegetables as Skirret, Salsafy, Scorzonera, and Cardoons. The display of vegetables was no less remarkable than that of fruit; indeed, we have rarely seen such high class produce at an October show as that shown on this occasion. The fruit and vegetable shows held here this season have all been most successful, and cannot have failed to have done good in bringing before the public examples of high class culture.

COLLECTIONS OF APPLES.—There were classes devoted for 100 sorts from nurserymen, 50 sorts from amateurs, and for the same number of dishes from exhibitors from the midland counties, Scotland, France, and the Channel Islands, America and Canada, but the classes beyond the first two were poorly represented. No fewer than five nurserymen showed collections of 100 dishes, the finest being that from Messrs. Lane and Son, of Berkhamstead, and as the collection shown by this well-known firm of fruit growers was comprised of the very best sorts, we may mention those that were the most conspicuous. These

consisted of fine examples, large in size, and good in colour.

Amongst kitchen sorts the finest were

Warner's King	Stone's Apple
Mère de Ménage	Cat's-head
R and Winter Nonsuch	Lady Heniker
Annie Elizabeth	New Hawthornden
Lord Suffield	Peasgood's Nonsuch
Lord Derby	Waltham Abbey Seedling
Wellington	Grenadier
Cellini	Blenheim Orange
Prince Albert	English Codlin

Dessert sorts included the following selection:—

Nonsuch	Abbott's Pearmain
Ribston Pippin	Gipsy King
Mother Apple	Adam's Pearmain
Golden Knob	Small's Golden Pippin
Calville Rouge (blood red)	Court of Wick
Golden Winter Pearmain	Margil
Evagil	Yellow Ingestre

The second best large collection was that from Messrs. G. and T. Lane, of St. Mary's Cray, while Messrs. Bunyard, of Maidstone, were third. Each of these showed representative collections of well-grown fruits, the other exhibitors in the class being Messrs. Wheeler, of Gloucester, and Messrs. Cheal, of Crawley.

Among eight collections of fifty sorts from amateurs, the finest was that from Mr. Roger Leigh's garden at Barham Court, Maidstone, whose gardener, Mr. Haycock, again showed a grand collection, but as the sorts were much the same as we have enumerated on previous occasions, we will not repeat them here. Mr. S. Ford showed from Leonardslee, Horsham, the second best collection, while the third came from another well-known hardy fruit grower, Mr. Goldsmith, of Hollenden Park, Tonbridge. Each of the eight collections in this class were remarkably fine, a fact which speaks well for high-class Apple culture in private gardens. There was but one collection of fifty sorts from growers in the midland counties. This was from the Earl of Harrington's garden at Elvaston Castle, Derby; some uncommonly fine dishes were included in it, and some of the sorts were particularly remarkable for high colour. One collection only came from Scotland, and this was a very poor one, and we imagine that the exhibitor of it had a difficult matter to muster the necessary number of sorts, judging by the appearance of several of the dishes. A poor display was also made in the class for collections of American Apples, Messrs. Thomas, of Covent Garden, being the only exhibitors, and to them a third prize only was awarded. The same firm, however, showed some extremely fine samples of imported Apples in barrels, the chief sorts being Baldwin, Lady's Blush, Red Pippin, Newtown Pippin, Greening, Winter Blush, and Red-cheek Pippin. The Channel Island exhibitors were only conspicuous by their absence. It is singular that these growers have not been represented at a single exhibition in London this year, notwithstanding the tempting prizes offered. They may, however, send their produce, as they usually do, to the November shows.

There was a brisker competition in the classes for twelve and six sorts, and numbers of the best Apple growers in the home counties competed. Among nine collections of six culinary sorts the best was that from Mr. Ross, at Welford Park, who showed a really grand half-a-dozen dishes, the sorts being Peasgood's Nonsuch, Mère de Ménage, Blenheim Orange, Lane's Prince Albert, Brabant Bellefleur, and Annie Elizabeth. Mr. Haycock showed for the second prize Lord Derby, Mère de Ménage, Belle Dubois, Reinette du Canada, Blenheim Orange, and Reinette de Caux. This was a fine class throughout, as was likewise that for twelve sorts, of which there were also nine exhibitors. In this class Mr. Haycock was first, the sorts he showed being a capital selection, comprising Reinette Très Tardive, Warner's King, Bedfordshire Foundling, Peasgood's Nonsuch, Reinette du Canada, Blenheim Orange, Stone's Pippin, and Mère de Ménage. The two next best, from Welford Park and Hollenden Park, were both uncommonly fine.

The best twelve sorts of dessert kinds among nine were those from the Duke of Richmond's

garden, at Goodwood. This was without question the finest dozen of dessert Apples that has been shown at South Kensington this year, and afforded evidence of the care and attention bestowed on Apple culture by Mr. Rutland. Every sort was represented to perfection, the selection being Adam's Pearmain (extremely fine), Scarlet Pearmain, King of the Pippins, Yellow Ingestre, (very fine), Cockle Pippin, Cox's Orange Pippin, Lewis's Incomparable, Pennington's Pearmain, Melon Apple, Ribston Pippin, and Nanny, a good old Sussex Apple which deserves to be more generally cultivated. A fine collection from Barham Court was second, while scarcely inferior was the third from Welford Park. This class was so excellent throughout, that an extra prize was awarded to Mr. Ford, of Leonardslee, Horsham, for a highly creditable collection. No fewer than thirteen exhibitors competed in the class for six sorts, the best being an exceedingly fine set from Mr. Goldsmith, who had the following sorts admirably representing Blenheim Orange, Ribston Pippin, Fearn's Pippin, King of the Pippins, Cox's Orange Pippin, and Scarlet Nonpareil. Mr. Haycock showed a capital half dozen for the second prize, as did likewise Mr. Rutland for the third.

The heaviest dish of six fruits among eight was that from Mr. Rutland, who had six huge fruits of Gloria Mundi, weighing just 7 lbs.; the second was Mère de Ménage, weighing 6 lbs. 8 ozs., while the third was Warner's King, weighing 6 lbs. 2 ozs. Other sorts in this class were Lord Derby, Warner's King (shown by three), and Blenheim Orange.

The best flavoured sort among eighteen was an exceptionally fine dish of Cox's Orange Pippin from Mr. Waterman, of Preston Hall. The second and third prizes were both taken by Ribston Pippin from Mr. Haycock and Mr. Ford respectively. The sorts shown were Cox's Orange by six exhibitors, Ribston by five, King of the Pippins by one, Margil by two, Crofton Pippin, Eve Apple, Whiting Pippin, and Winter Strawberry.

PEARS.—There was but one class on this occasion for Pears. This was for six sorts, of which there were six exhibitors. The finest collection was, as usual, from Barham Court, the sorts which Mr. Haycock showed being Pitmaston Duchess, General Todleben, Conseiller de la Cour, Duchesse d'Angoulême, Passe Crassane, and Doyenné du Comice, all enormous fruits. Mr. Goldsmith showed the second best set, his selection being Beurré Diel, Nouveau Poiteau, Beurré Superfin, Beurré Hardy, Conseiller de la Cour, and Doyenné du Comice. Mr. Rutland was third with very fine dishes, and among the other collections was a dish from Mr. Searle's gardener at Crediton of Catillac, one fruit of which weighed 29 ozs., and another of Uvedale's St. Germain, weighing 31 ozs., produced on open-air trees.

There were classes for Quinces, Medlars, and Filberts, but, with the exception of the latter, all were poorly represented. The first prize in the miscellaneous class was taken by Mr. Ross, of Welford Park, for three enormous Smooth Cayenne Pines, weighing respectively 8 lbs. 12½ ozs., 7 lbs. 3 ozs., and 6 lbs. 15 ozs. The second prize was taken by Mr. Smith, Cobham, for Lady Downes and Mrs. Pearson Grapes, fine bunches, though grown without fire-heat; also for Pears and Plums. An interesting exhibit by Mr. A. J. R. Trendell consisted of five bunches of Black Hamburg Grapes. These five bunches are selected from about sixty, all of which have grown and ripened outside his house in the Bayswater Road. This successful cultivation out of doors, although doubtless very much aided by an exceptionally fine summer, is an evidence of what may be done outside London houses in bringing Grapes to a condition fit for the table.

Numerous other miscellaneous exhibits of fruit were shown, the chief being a grand collection of about 100 sorts of Apples from Messrs. Veitch, of Chelsea, which included all the leading sorts, together with some fine examples of the new Sandringham Apple, the sort which obtained a first-class certificate at the Apple Congress last year. Messrs. W. Paul, of Waltham Cross, and

Messrs. Rivers, of Sawbridgeworth, also showed collections of Apples.

Vegetables.—Nineteen classes were provided for various kinds of vegetables in season. Most of the classes were well represented, whilst the competition in a few instances was very keen. The productions exhibited were also of excellent quality in most instances; the tendency, however, was in some few cases towards coarseness rather than quality. This was notably so in the first prize collection of Beet, some three or four kinds being only fit for cattle feeding; whilst of three or more dishes in the class for Turnips, the same might be said in all propriety. Of collections of Gourds and Squashes there were only two competitors, the first prize being awarded to a large collection occupying a considerable amount of table space. The curious as well as ornamental kinds were represented in this collection, but only a few of them were named, whilst small sorts generally predominated. This collection came from Mr. Osman, of Sutton. The second award was taken by a smaller collection, the effect of which was enhanced by a garnishing of Parsley. This was exhibited from Mrs. Montefiore's garden, Worth Park, Sussex, whose gardener also won the premier award in the class for ten varieties of Gourds. Mr. Cochrane, of Hampstead, took the first prize for the heaviest or largest specimen with an enormous fruit, which weighed 158 lbs. when it was cut from the plant. The largest collection, however, of Gourds and Squashes was exhibited from the Royal Horticultural Society's Gardens at Chiswick by Mr. Barron. This was an excellent representative collection of both large and small kinds from among the useful as well as ornamental sections of the Cucurbit family. The prizes offered in the three classes for Gourds and Squashes amounted to about two-thirds of the whole sum of money set apart for prizes in the sixteen classes for other vegetables, but taking into consideration the utility of these latter classes, the result must be considered as far more satisfactory than in the case of the Gourds.

Eleven collections of six heads of Celery were shown, Major Clarke's Solid Red being the predominating kind. A sort bearing close resemblance to this won the first prize for Mr. Thomas, of Covent Garden. These six heads were well blanched, of good length, but pithy in the case of the one example that was cut. Enormous heads were shown by Mr. May, Northaw House, Barnet, but were not sufficiently blanched in comparison with those in the winning collections. The red Celeries evidently (and we think rightly, too) meet with more approval by those who exhibit than do the white kinds, being generally more solid and of hardier constitution.

For Parsnips there were eight entries, and these were of uniform excellence throughout. Mr. Haycock winning the first prize with very fine roots of the Hollow-crowned sort. These roots left nothing to be desired in any way, being of good colour, very clean, and not too tapering. Specimens of The Student from Mr. Bloxham were awarded the second prize, and in all four sets of each kind were shown. The class for Carrots brought out fifteen exhibitors, James' Intermediate being the favourite kind in nearly every instance, Mr. Davis winning the first prize with very clean samples of this sort. Fifteen exhibitors also competed in the class for Turnips, but, as previously remarked, a portion of the productions was far too large and coarse for the table. The first prize was taken with Snowball, while among others shown were White Stone and White and Red Globe.

For a collection of Onions Mr. Wingrove, gardener at Rousham Park, won the first prize with a collection of thirteen kinds, as follows: Rousham Park Hero (of white Spanish type), very solid and weighty; Nuneham Park, Sutton's Improved Reading, and Walker's Improved, bearing a close resemblance to each other, and all after the brown Spanish; Williams' Magnum Bonum, a fine form of Brown Globe, James' Longkeeping, and Bedfordshire Champion, again bear-

ing close resemblance; Brown Globe, Cranston's Excelsior (paler in colour than the last named), The White Spanish (good and true to the type), The Wroton, Flat Tripoli, and Danver's Yellow. The second award was taken by a collection from Mr. Haycock, and consisted of varieties far more distinct from each other than those shown in the premier collection, and as follows: viz., Banbury Improved, Deptford Giant, Madeira, Blood Red, Bedfordshire Champion, Globe Tripoli, Giant Rocca, Brown Globe, White Globe, and The Queen. For the prizes offered for a single dish of Onions there were fourteen exhibitors, Willingrove again winning the first prize with a very fine set of nine roots of Rousham Park Hero, extra large, of fine shape, and very weighty, Mr. Miles being placed second with a fine dish of Cave's Pinesfield Improved. One exhibit in this class was to all appearance of foreign growth, though not stated as such, but the home-grown samples easily beat this lot, to which no prize was awarded.

For Cardoons there was but one entry, at least only one set of four heads was shown. These came from Mr. Osman, and were well grown examples, solid, and blanched to a good length. Four plants were required in the class for Brussels Sprouts, and seven sets of that number were shown; but by far the best came from Mr. May, being a variety of his own raising named May's Northaw Prize. These were everything that one could desire in this esteemed vegetable, having Sprouts of medium size, but very solid and compact, the growth of the plant being very vigorous with a long stem, well furnished with Sprouts all the way up the stem. Mr. Richards won the second prize with a set of Veitch's Exhibition variety, a dwarf growing kind with larger Sprouts than in the first prize four. For Endives, both in the collection and for one kind only, Mr. Richards well won the first prizes, showing in each case finely blanched samples which many of the other exhibitors apparently lost sight of as being a necessary point in their culture. He showed six kinds in the collection, the three best being Broad-leaved Batavian, Green Curled, and Picot's Curled, and with the latter kind he took the first prize for one kind, whilst Broad-leaved Batavian gained the second for Mr. Neighbour; these latter were also well blanched.

Collections of Beet were shown by two, the first prize being awarded to Mr. Woodward, Isleworth, for a collection, the best among which from a culinary point of view were Dell's Crimson, Nutting's Selected, and Dimmick's Nonpareil, the other kinds being generally speaking too large and coarse. Four capital kinds were shown by Mr. Meads, Beckett Park Gardens, for the second prize. These were the two first kinds above named to which were added Pragnell's Exhibition and Sutton's Selected. For one kind of Beet only there were 21 exhibits, the first prize going to three roots of medium size from Mr. A. Reed, Newark-on-Trent, and the second again to Mr. Meads; Carter's, Dell's, Nutting's, Sutton's, and Pragnell's selections being the best types shown in this class.

Ten exhibitors of three Cauliflowers competed for the three prizes, which in each case were awarded to extra large samples, evidently in each instance from market growers, and no criterion of what a Cauliflower should be for a gentleman's table, all being far too large for cooking whole. The exhibits in this class from gentlemen's gardeners were on the whole of far better size for even general use.

QUESTIONS.

5272.—**Garden structures.**—Will some of your readers kindly say if the wood of either home grown Scotch Fir or Silver Pine is suitable for horticultural buildings?—ENQUIRER.

5273.—**Aciphylla squarrosa.**—Can any reader of THE GARDEN spare a plant of this, or tell me where it can be purchased? I have perused about half-a-hundred nurserymen's lists this evening, but cannot find it offered in any of them. It is a native of New Zealand, and known to the settlers as Spear Grass or Wild Spaniard.—A. D. W.

5274.—**Pear leaves.**—I shall be obliged if any of your readers can tell me why the leaves of one of my Marie

Louise pyramid Pears have turned dark brown both last autumn and this. Nothing has been done to the roots of the tree since it was planted ten years ago in a hole 3 feet deep and floored. I enclose some of the leaves.—E.

* * * The leaves sent seem merely to show a natural discolouration before the fall. There is no fungus on them.—ED.

5275.—**Peach and Nectarine stones splitting.**—What is the cause of this happening before the fruits are ripe in the case of both old and young trees of Royal George Peach and Violette Hâtive Nectarine? Water they have had in abundance. Will Gishurst compound, 8 ounces to the gallon, injure in any way the buds if used over all while quite dormant? or is there any better remedy for brown scale?—AMATEUR.

5276.—**Begonia crosses.**—Will any of your correspondents kindly give me the reason why Begonia xanthina seeds so sparingly, the female flowers falling off the stem even before they receive the pollen on their stigmas? I have several of these plants in the glasshouse, and only one or two seed vessels have come to maturity. I should also be obliged if some of your readers would tell me whether this Begonia has ever been crossed with Rex, and the name of the hybrid obtained.—D. L. F., *Ca tel Rovere, Salerno, Italy.*

5277.—**Primula Parryi.**—I have some seedlings of Primula Parryi which appear to be dying down, and would be very much obliged for information as to—1, whether the species is deciduous in winter or otherwise; 2, whether they need much or any protection; and 3, if they need as much water during the winter as they do during the period of growth. I had the seeds from Mr. Thompson, of Ipswich, and am pleased to say they germinated very well by following his instructions. Perhaps Mr. Thompson would kindly give me the information I need through THE GARDEN.—G. H. W.

5278.—**Stephanotis not flowering.**—I have in the stove, trained to the rafters, three large plants of Stephanotis, and should, judging from the growth made, be able to cut a large amount of flowers; but in this I am disappointed; the flowers come very scanty. The roots are in prepared beds in front of the stove, inside. I should be glad of information as to how to treat them during the coming winter and spring. Flowers are required here more in autumn than at any other time. No doubt some of your correspondents will be able to help me in reference to this matter by giving their advice and experience.—F. A.

GARDENERS' BENEVOLENT INSTITUTION.

EARLIER in the year Mr. Cutler had good hopes of being able to bring up the reserve fund to £20,000, a circumstance which would enable the committee to materially augment the pensions, but now he seems to despair of attaining his object. I am exceedingly sorry for this, and venture, therefore, to supplement his last appeal with a few remarks of my own. It is to gardeners I would especially appeal, as it appears the majority do not appreciate the efforts of Mr. Cutler and others on their behalf. For my part I long abstained from supporting the institution from motives which need not be gone into, and which I now regret ever having entertained. For years I have paid a sum into an insurance agency, but if I had been wise I should have first become a life member of the Gardeners' Benevolent Institution, or at any rate have become an annual subscriber, for the simple reason that it is the best form of assurance with which I am acquainted. No other institution open to us can possibly guarantee such liberal provision for my widow and children, should I unfortunately be prematurely cut off, and no other institution makes such good provision for those of its supporters who in their helpless old age may stand in need of it. If we are able to provide for ourselves, so much the better; and in this case we shall have the satisfaction of knowing that our subscription was by no means expended on an unworthy object. Selfish motives alone ought to induce all gardeners to support such a deserving institution; but I would rather appeal to their higher feelings, and suggest that all should assist more with the idea of helping their needy co-workers than themselves. No one need think that large sums only would be thankfully accepted by the secretary; all should give according as their means and position justify them in doing so. If all would send a postal order for one shilling only, how large a sum would soon be at the disposal of the committee; but there are plenty who do not hesitate to subscribe larger sums to a less worthy object. The address of the secretary is 14, Tavistock Row, Covent Garden, and doubtless the editors of the different garden papers would gladly receive subscriptions in aid of the institution.

W. I. M.

Belladonna Lilies.—These do well out-of-doors if planted in sheltered situations, which are necessary, not so much for the bulbs as for the young foliage which they make very early in spring, when it is liable to get destroyed or injured by frost. To prevent this it is necessary to give the plants a warm, sunny border, the most suitable places being either close along the foot of a south wall or in front of a hothouse or greenhouse, the last named position being the best, as there the soil extracts a little warmth from the pipes inside; frost is thus warded off, and the leaves kept safe from its grip. To give the plants a fair start and to insure their well-being, the earth forming the border should be dug out a yard deep, and the bottom then drained by having 6 inches or so of broken bricks put in, and over them some half-rotten manure. The soil, if light, rich, and good, may then be returned, and if not, some fresh put in its place, and then all will be ready for planting. Now is a good time for doing all this, as the bulbs are at rest. They will, however, soon be making fresh roots, and should be planted before this takes place, so as to give them a chance of getting established and making plenty of foliage, on which their flowering in a great measure depends. When planted, the border ought at once to be mulched, the best material for the purpose being leaf-mould or Cocconut fibre, both of which are of a non-conducting character and will keep out a great deal of frost. As an additional protection in spring, it is a good plan to arrange, by the aid of a rod and a few stakes, to have a covering of mats by night, or to stick in some evergreen branches, for if the foliage gets cut the plants are greatly weakened thereby, and refuse to throw up any bloom.—S. D.

LATE NOTES.

Telephone Peas from the open ground have been sent to us from the gardens at Little Cassiobury, Watford, by Mr. F. Bowles, who states that he has been gathering dishes of this variety up to the present date.

New Chrysanthemum.—I send you some blooms of a new semi-double Chrysanthemum, which seems to me likely to be one of our best autumn varieties. What is your opinion of it?—JOHN FORBES, *Buckeleuch Nurseries, Hawick.*

* * * A very pretty, medium-sized, creamy white Chrysanthemum, which only wants a good name. Please send one, as we have made a sketch of the flower.—ED.

Horticultural builders.—It will be seen by an advertisement in another column that the name of the firm of Dennis & Co., of Chelmsford, has been changed to that of Crompton & Fawkes, the latter being the managing partner.

Tomato King Humbert.—I have seen this Tomato on several occasions during the summer. It appears to bear more freely than some others, but that is all I can say in its favour; in other points I do not see that it excels even the very oldest sorts.—J. C. C.

Valloia purpurea seeding.—It may interest your readers to hear that a plant of Valloia purpurea bore seed here in 1880. The seed was, I think, sown in the following February, and the bulbs have flowered this season.—GEO. C. DAVIE, *Bishop's Tawton, Barnstaple.*

Comte Brazza's Violet.—My opinion is that this Violet is better than the one named Swanley White. I had the pleasure of seeing Mr. Allan's Violets last February, when the two were growing side by side in 6-inch pots, and Comte Brazza's was quite ahead of the one just named both in quantity and size of bloom.—A. D. H.

Seeding Dahlias (E. J. Lowe).—The flowers of the seedling called Yellow and White Paragon are very pretty; it is identical with the variety sent to us by Mr. Teesdale and Mr. Fish. The other seedlings, being crosses from D. glabrata, show a distinctness from ordinary sorts, but the flowers sent were too much bruised to enable us to form an opinion upon them.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—*M. F.*—1, Aster Novi-Belgii minimus; 2, A. longifolius; 3, A. turbinellus.—*T. Coller.*—*Ailanthus glandulosa* is called the Tree of Heaven; it is, as you say, somewhat like a Sumach.—*J. C. C.*—1, Ilex opaca (United States); 2, Spartium junceum (S.W. Europe); 3, Fagus betuloides (Chili, Patagonia, &c.).—*A. C.*—We cannot possibly name Fuchsias from leaves only.—*E. M. G.*—Next week.—*J. E. V.*—Tree is White Bean (Pyrus Aria); other name next week.—*Hortus.*—Next week.—*F.*—Aster Novi-Belgii.

BOOK RECEIVED.

"Les Plantes des Alpes," by Henry Correvon, Director of the Jardin d'Acclimation, Geneva.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

SEEDLING CROCUSES.

A CASUAL remark by Mr. Smith, of Newry, on seedling Crocuses brings to my mind the fact that but few gardeners in private places or amateurs think it worth their while to raise Crocuses from seeds—home saved seeds I mean in our English gardens. Seed is very often produced upon warm, sandy soils, and in Holland of course seedlings are raised by the thousand annually.

Everyone nearly now-a-days knows of the late Mr. Edward Leeds, of Manchester, as a raiser of new Daffodils, but few perhaps credit him with having paid attention to the rearing of Crocuses from seeds as well. That he did so, however, is proved by some remarks in vol. iii. of Moore and Ayres' "Magazine of Botany," where at p. 305 there is a good coloured figure and description of one of his seedlings named *Crocus vernus* var. *Leedsi*. The plate by Rosenberg, lithographed on zinc and coloured by hand, represents a dwarf vigorous plant, bearing large plum-purple flowers, with broad blunt perianth segments, margined and tipped with white. It is evidently a distinct and showy variety. Mr. Leeds himself thus writes of it at the page cited above: "This *Crocus* is one out of many thousands which I raised some years ago, and the most distinct. It is probably from *C. vernus* var. *obovatus* crossed with some purple variety, for I took some pains in fertilising one sort with another. When well established the white edging is seen from a long distance, but it does not appear in perfection until the plant is in vigorous growth." In the history of the Crocuses, published by the late Dean Herbert in the journal of the Royal Horticultural Society, he thus alludes to *C. vernus*:—

"*C. VERNUS* is one of the most widely extended Crocuses and of the easiest culture, producing seeds abundantly, which grow up spontaneously. It is the *Crocus* of the Alps, but its flower is small there, promiscuously purple and white, or whitish, generally with the throat purple on the outside, but always white and hairy within. It reaches Cevennes, and I am told is to be found, though rare, on the Pyrenees. It extends with white flowers into Carinthia, and is found white with very blunt obovate flowers on the Bavarian Alps, sometimes assuming a blush of purple. I believe it is only found on particular spots on the Pyrenees, affecting the oolitic or jurassic limestone. On the Alps it reaches above 5000 feet of altitude. I have had it both white and purple from the Tyrol. The fine purple Neapolitan variety (*neapolitanus*) inhabits the loftiest mountains of Calabria and Suciaria, not descending lower than 5000 feet. On Monte Pollino it flowers as late as June and July, reaching an elevation of 6000 feet. On the Wengern Alps its flowers actually pierce the remaining snow in June. The Odessa variety (*nubigena*), which grows on part of the Steppes is much finer, and from that stock the finest garden varieties seem to be derived. The segments of the flower are so rounded and concave that the half-expanded flower is nearly spherical.

They are white, sometimes beautifully striped on the inside, or deep purple." Interesting as this account is, there is to me something wanting. I have never seen *C. vernus* growing wild abroad, but in the Nottingham meadows, within arrow-shot of the Castle and its honeycombed rock of sandstone, there are acres of this *Crocus* which if not actually wild there, is at any rate abundantly naturalised. It crops up here and there, indeed, all by the silvery Trent between Nottingham and Newark, or even as far as Derby, and late in March or in April, according to the season, the green meadows here and there as seen from a distance seem to have a pale lilac veil over them, an effect caused by the myriads of its blossoms nestling among the young Grass. Now and then you see a white one or one faintly striped, but, as a rule, all are of a pale lilac-purple tint.

A plant so hardy, and withal so variably beautiful, is well worth raising from seed in our gardens, and the genus itself, with its numerous lovely species from Europe and Asia, offers to the careful hybridist a splendid harvest of new forms. Like its first cousin, the Iris, the *Crocus* has been somewhat neglected until quite recently in our gardens, but now that some of our most skilful botanists and most successful amateurs are taking up its culture in right good earnest, we may hope for better things; and no doubt Mr. Maw's splendidly illustrated monograph will, when published, give quite an impetus to the study and admiration of such a lovely, albeit somewhat fragile, garden flower. F. W. B.

Impatiens Jerdoniæ.—The importance of the large genus *Impatiens* to horticulturists has been added to recently by the introduction of three very pretty species to the already numerous kinds grown in gardens—we allude to *I. Sultani*, *I. flaccida*, and its white variety, *I. flaccida alba*. For the possession of these we are indebted to Kew, the first mentioned kind having found its way thither as a stray or little stowaway in a Wardian case of plants from Zanzibar, and the other two by means of imported seeds. Through Kew also we first became acquainted with the pretty little Indian species *I. Jerdoniæ*, it having been introduced into those gardens more than 30 years ago. Unlike the majority of the *Impatiens*, including the three kinds above named, which have a Pansy-shaped flower, with a thin spur, *I. Jerdoniæ* is characterised by a flower composed almost wholly of spur, which is inflated like a sack, and may be compared to a French clog or "sabot" with a very pointed toe. The whole flower is an inch long by half-an-inch in width, and, with the exception of the mouth, which is yellow, is of a bright red colour. They are borne in axillary racemes on the ends of the short thick fleshy stems; the colour of the stems is dark purple, that of the leaves being green. This species bears some resemblance to *I. Walkeri*, a Ceylon species with sack-shaped flowers, which differ from those of *I. Jerdoniæ* in being wholly red and in having longer, thinner arcuated stems. Both species require stove treatment. *I. Jerdoniæ* is now flowering in the T range at Kew, where it appears to be quite at home, planted in a wire basket of peat soil and suspended near the glass.—B.

Leaf gardening.—Allow me to add my testimony to that of "J. C. C." respecting the suitability of leaf gardening for a late display. Here we annually plant out about 100,000 bedding plants of all kinds, and all the beds in close proximity to the mansion are "carpeted," in the execution of which about 70,000 plants are employed, all for foliage effect, with the exception of a few dwarf Lobelias, and these we intend discarding from the arrangement as far as practicable another season. These beds at this date (Novem-

ber 4) have of course lost some of the brightness which they showed a month ago. Coleuses have dropped their leaves and *Alternantheras* are dull; still the additional lustre which *Echeverias*, *Sedums*, &c., possess now compared with their aspect during the heat of the summer is ample recompense for any loss sustained in the way of colour, and the effect produced is infinitely superior to the bedraggled appearance of the usual flowering plants after a storm of rain even early in September. Nevertheless, we do not confine ourselves to one style of bedding; we find ample and suitable space to plant *Pelargoniums*, &c., separately, as well as in combination, with fine-foliaged plants. We place them along the kitchen garden borders around large *Rhododendrons* and other beds, where, besides the display which they make during fine weather, they have the additional merit of assisting us in filling the cut-flower basket. Sub-tropical bedding also finds a place here, and herbaceous plants and their requirements are not forgotten, nor their manifold good qualities overlooked.—J. R., *Tan-y-Bwlch, N. Wales*.

PLANTS IN FLOWER.

Clustered Lapagerias.—I send you what I think is of rare occurrence—namely, ten fully expanded blooms of *Lapageria rosea* on a single stem. The plant from which I cut the specimen sent is growing in a pot in a greenhouse and is trained on a balloon trellis.—JOHN CRICKSHANK, *Rushton Hall, Kettering*.

*A remarkably fine cluster of flowers, the produce, as our correspondent states, of one bud.—Ed.

Asters and Violets.—I send flowers of *Aster cassinii*, a variety of *A. Amellus*, sent to us a few years ago by Mr. Niven, of Hull. It is the latest to blossom of any of the Asters here, the others being now nearly over. The drought has nearly killed some of the Czar Violets, while others seem all the better for it.—C. M. OWEN, *Knockmullen, Gorey, Ireland*.

*The Aster is really a good one, almost as fine as *Amellus* itself, and of additional value being so late. The Violets are lovely, their large flowers and broad foliage indicating luxuriant growth.—Ed.

Impatiens flaccida alba.—This pretty white Balsam is just now attractive in the Water Lily house at Kew, where a group of it forms a fringe to a bold mass of the old *Gloxinia insignis*. The flowers of the Balsam are as white as snow, and not being double, as is the ordinary garden Balsam, are very elegant, the flowers hanging gracefully on slender stems. It is a plant to be recommended for stove culture. It is planted out in free soil at Kew, as well as the *Gloxinia*, and both show by their luxuriant growth the advantage of thus planting them.

The climbing *Aloe ciliaris* is a desirable plant to grow in the corner of a hothouse in which the air is too heated and dry for the well-being of most other plants. There is in almost every house some such a corner which this succulent *Aloe* would just suit. It is, moreover, a showy plant, particularly when in flower, as it is at this season. In the great Cactus house at Kew a large plant of it trained beneath one of the rafters is now bearing numerous clusters of orange-red flowers, which remain in perfection a considerable time. It likes plenty of heat and a dry air, but we have seen it often growing luxuriantly in an ordinary stove with other plants.

Colchicum Parkinsoni.—This pretty chequered Meadow Saffron is now beautifully in bloom in Messrs. Barr & Sons' grounds, at Tooting, and has been so for some time; it is flowering considerably earlier this season than usual, a circumstance which may probably be accounted for by the earlier ripening of the bulbs, the result of the hot, dry weather. *C. Parkinsoni* and *C. variegatum*, which both have peculiarly chequered flowers, are highly interesting as well as beautiful, inasmuch as they take us back to the early days of gardening when they were among the comparatively few bulbs cultivated in the days of Parkinson. He figures it admirably in his quaint book.

Sagittaria montevidensis.—A good name for this new South American aquatic plant would be the Giant Arrowhead, for it is really a giant compared with our native Arrowhead (*S. sagittifolia*).

folia). At Kew this South American species has been grown for the past year or two. At first it was in a pot; then it grew bigger than our native, but so soon as it was planted out in a rich bed of free soil it began to grow apace, till now its huge leaves are borne on stalks over 6 feet high. The flower-spikes, moreover, are large in proportion. They almost reach the leaves in height, and carry numerous whorls of flower which at once remind one of some of our beautiful *Cistuses*, being white with a maroon-crimson blotch at the base of each petal encircled by gold. Here again is another instance of the good results of planting out, and this is more striking, inasmuch as a yard or so from these gigantic plants is a puny plant of the same species growing in a pot, and which is scarcely larger than our native species. We hope to figure this handsome plant shortly.

Salvia Pitcheri.—The extreme beauty and elegance of this Sage are admirably exemplified in a spike sent to us a few days since by Mr. Bedford, from Straffan House, Kildare. The spike is much branched, the central branch being over a foot in length, and quite covered with its bright azure-blue flowers. A lovelier plant could not be found in gardens at this season, and it is on this account invaluable. Mr. Bedford remarks that he is still unsuccessful in flowering well spring-struck cuttings of this *Salvia*, and he is doubtful if the species described by Mr. Mayne last December (p. 539) is the true *Pitcheri*. Perhaps Mr. Mayne would send us a specimen of his *Salvia*, which probably would settle the question of identity of the two kinds. *S. azurea* is very similar to *S. Pitcheri*, and Mr. Mayne's plant may be that.

Schizostylis coccinea.—We have received from Straffan House, Kildare, some very fine specimens of this beautiful plant, fully 2 feet high and well furnished with blooms. Mr. Bedford, the gardener, states that it grows at Straffan in quantity, and is as free in growth as a weed; no amount of cold seems to hurt the roots, but in the cold, wet soil there sharp frosts will soon injure the flowers, which are soon spoilt. Since writing our note on the plants from Mr. Wilson last week he brings us other specimens of the *Schizostylis*, which quite refutes what we said as to the plant not being so fine as usual at Wisley. The present flower-stems are over 3 feet high, and are carrying numbers of bloom. Those who have only seen some half-developed specimens of this plant would scarcely credit that it can be grown so tall and fine as Mr. Wilson and Mr. Bedford grow it. It is an extremely beautiful plant for the autumn garden or greenhouse.

Begonia socotrana.—The flowering season of this pretty new *Begonia* has just commenced, and will continue without intermission throughout the winter. This continuous and free-flowering character adds greatly to the value of this plant, apart from the pleasing colour of its flowers and bold shield-shaped leafage. The plant, moreover, seems to improve much in the hands of good cultivators, the flowers being larger and more plentiful than when first introduced at Kew (its birthplace, so to speak). Some attention is paid to the culture of this *Begonia*, and just now it is enlivening one of the stoves with a goodly display of bloom. We are pleased to see that in the arrangement of the numerous plants of this *Begonia* grown at Kew, instead of being dotted about here and there, they are made to form groups, thereby displaying to better advantage their true habit and beauty. Those who would like to grow a *Begonia* distinct from all others ought to make the acquaintance of this one.

The tropical Water Lilies at Kew are about the most attractive plants in the garden at the present time, as indeed they have been during the whole season. Such lovely Lilies as *Nymphaea zanzibarensis*, as well as *devoniensis*, *dentata*, *stellata*, and others, open numbers of flowers daily, and which are particularly beautiful in the early morning. Since the new heating arrangements have been effected in connection with this house it has been much more satisfactory than hitherto. There is now a separate boiler independent of the

Palm house. The house will be opened throughout the winter to the public; whereas formerly visitors were excluded from it for several months. It is to be regretted that the *Victoria regia* is not grown in this house, as it would have a better effect than in the square tank in which it is grown and which is much too high to see the plant properly; besides there is a certain incongruity in the large circular leaves being in a square tank. The round tank in the old Lily house, originally built, we believe, for the *Victoria*, is very properly circular and considerably below the eye.

Notes from Munstead.—*Smilax aspera* is now flowering very freely on a south wall. In the case of *Iris stylosa* the first flower of the season opened on November 2, the earliest date on which I have yet observed it. *Helenium autumnale pumilum* is a valuable plant both for border decoration and for cutting, blooming for four months or more. The taller kind (*Helenium autumnale*) has a later and much shorter flowering season. Some well-established plants of *Lithospermum prostratum* have a fair sprinkling of their bright blue flowers—the beginning of their blooming season, that will continue throughout the winter and culminate in May. Bright as their flowers are, they are surpassed by the vivid brilliancy of *L. rosmarinifolium* now in flower with us in sheltered sunny rockwork.—G. J., West Surrey.

*** *Ceanothus Gloire de Versailles* and the handsome flowers of the Tree Poppy (*Romneya*) with good Roses and Pansies, are among the fresh flowers that come with this note; also finely-coloured foliage of the *Barbarossa Grape*.—ED.

ORCHID NOTES.

Barkeria Skinneri.—It is not often one sees *Barkerias* well grown and flowered, but they are evidently understood by Dr. Duke's gardener at Lewisham. In the Orchid collection there there is a plant of this species carrying flower-spikes which have been in perfection for a long time. Such a specimen as this is remarkable and must be a beautiful sight, as this *Barkeria* is so lovely in colour and so elegant in growth.

Zygopetalum forcipatum.—There is something so distinct about this new Orchid that causes it to at once arrest attention, although it cannot be called a showy species in the ordinary sense of the term. It has growths somewhat similar to those of a *Batemannia*, and the flowers are produced singly on slender stems from the collar of the plant. The flower measures between 1 inch and 2 inches across, with white sepals and a broad lip peculiarly curled under itself; this is white with a few specklings of purple. It is evidently a cool house Orchid, as Messrs. Shuttleworth & Carder (who introduced it) grow it well with *Odontoglossums*. It is now in flower in their nursery.

Promenaea Rollissoni.—This is quite a gem among Orchids, and, moreover, so extremely rare that it is well worth a note. It may now be seen beautifully in bloom in Messrs. Shuttleworth & Carder's nursery, Park Road, Clapham. It is different from either *P. citrina* or *P. stapelioides* as regards the flowers, but is similar in growth, the bulbs being small and flattish, and with foliage of that membranaceous texture and peculiar pale green which is quite unmistakable. The flowers of *P. Rollissoni* are about an inch in diameter, and are produced on short stalks proceeding from the base of the bulbs. The sepals are creamy white, and the broadish lip is white, heavily barred with blackish crimson. Several flowers are borne on a plant, and when seen fully expanded together are exceedingly attractive. Mr. Shuttleworth grows his plants of it very successful in a cool *Odontoglossum* house in suspended shallow pans or baskets.

Cattleya aurea.—A really superb variety of this gorgeous Orchid has just opened its flowers in Messrs. Shuttleworth & Carder's nursery, and is much the richest coloured form we have seen. The chief beauty resides in the broad labellum, on which there is a broad band of velvety maroon-crimson of the intensest shade imagin-

able. This deep band forms a margin to the fine parallel pencillings of crimson and bright gold which extends the whole way up the labellum. The sepals when we saw them just after expansion were pale primrose, but probably they would become darker, and so give additional richness to the lip. This is not a chance plant from an importation, but was specially marked by the collector as "extra fine." Other Orchids in flower in this nursery include *Paphinia ragosa* and its fine variety *P. grandis*, which is indeed a very handsome and scarce Orchid; a very pale form of *Cattleya Harrisoniae*, a variety of *Pleione Wallichiana* of several shades deeper than ordinary, and the two forms of that pretty Lady's Slipper Orchid, *Cypripedium Schlimi*. One of these forms comes from the Eastern Andes, while the other comes from the western range. The latter is much freer in growth, and is altogether a superior plant.

Cattleya gigas.—An exceedingly fine form of this charming species is now in flower in the choice collection belonging to Mr. Whyte, Pentland House, Lee. The plant has been in this collection for some time, but until now has failed to flower. It is not to the quantity, but the quality of the individual blooms that I wish to direct attention. There are only two flowers on the spike, but each of these exceed the normal size in length and breadth of sepals, petals, and labellum, as well as in depth and purity of colours. The labellum is very large and broad, of good substance, and in colours intense rich purple with well-defined bright yellow spots in the throat. The petals and sepals are also very large and well formed, and of a delicate, soft rose colour. In the same house, too, I noted amongst the cool section a good and well-flowered variety of *Odontoglossum Uro-Skinneri*, which Mr. Whyte's gardener informed me had been in flower for a long time past. Several varieties of *Oncidium Forbesi* were in flower in the same house, one of which was a very superior variety. The collection here, although not large, is a very choice one, and pains are taken to grow only the best varieties, especially those belonging to the *Odontoglossum* family.—T. W. S.

5278.—**Stephanotis not flowering.**—Three large plants of this useful stove climber ought to produce a large amount of bloom, i.e., if the variety is good, but I have a word or two to say in reference to that matter. I planted a good strong plant in a well-prepared bed some seven years ago; it covered the roof of the house in which it was placed with plenty of growth, but produced very little bloom. I therefore resolved to try another plant, a cutting from a neighbour's *Stephanotis*, which always bloomed well. This was substituted for the old plant, and now we have no lack of blossom. It has covered the roof of a span-roofed stove about 15 feet long, and from the middle of March till the end of October we get a very large amount of bloom. I may state that the plant has had no shade this summer; it used to flag for a time during the hottest part of the day, but after the house was shut up and damped down it soon looked as fresh as ever. I have just pruned it back to keep it at rest till the turn of the year.—JOHN GUYELL, *Lynton House, Clapham Common*.

ROSE AND CATALPA.

DURING various pleasant visits which we made to the late Mr. Bohn's garden at Twickenham we saw some interesting plants and trees, but nothing quite so beautiful as that of which a sketch is here reproduced. It consisted of a white climbing Rose which had long grown over an old Catalpa tree. Here and there were among both a few sprays of Virginian Creeper. Perhaps no sketch could do justice to the myriads of Roses that tumbled gracefully over the tree. Such things serve to show that living pictures are quite easily made in our gardens, and that we may have a great many of them. This delightful white Rose climbs and tosses about in such a graceful way, that it often takes to picture-making by itself.

FLOWER GARDEN.

WINTERING BEDDING PELARGONIUMS.

"J. G." (p. 364) seems to condemn the practice of cutting back bedding Pelargoniums after they are taken up, but what, would ask, can otherwise be done with them? To winter them without cutting back would require a great deal of room, as the tops would fill almost as much space as they did on the ground. If the plants are wanted for purposes of propagation, then I, like "J. G.," would say, save the heads; but if to plant out again, by all means prune them hard in, as by so doing hundreds may be packed away and wintered on any light shelves. As to their damping at the cut parts, much depends on how they are treated, and whether the wood left is ripe and hard, which it should be, all soft, immature shoots being cut out or removed. If this is done and the branches are only left an inch or two long, so as to contain one or two buds, the plants may be put close together in boxes or pots, and kept in a dry house without any decay taking place. The way in which we manage is this: we shorten the roots as well as the tops, and after the plants are packed close in the soil give a watering to settle it about them; they then get no more, unless they begin to shrivel, till the eyes break. In spring we either pot singly or bind a little Moss and loam about the roots, and then lay them in frames, using sifted leaf soil to bury the roots; out of this they lift capitally in the spring, having good balls, and are then planted direct in the beds. Gold Chain and most others of the variegated kinds are only thinned out by having any awkward or misplaced shoots removed; then all the leaves are picked off those left, and the plants are placed in boxes as close as they can be worked in together; they are then watered heavily to wash the soil among the roots and left to dry. As variegated Pelargoniums are more tender than the green-leaved sorts, they require a little more heat to winter them well, and should be placed near the light, where they can have a fair amount of air to keep them from damping. Early in spring some of the shoots may be

taken off for cuttings, as just as they are beginning to grow they strike freely if kept a little dry and stood near the glass on a shelf. The advantage of having as many old plants of Pelargoniums as can be saved is that they are so much better than young ones, as they flower more readily without making much growth. S. D.

previous to sowing; therefore it is not so often found in large gardens as in small ones.—J. C. B.

PLANTING BULBS.

I CANNOT help saying that if writers like Mr. T. Smith, Newry (p. 381), would first endeavour to understand other people's statements before they attempt to dispute them, it would save much needless wrangling. I wrote some time ago that plantations of *Narcissus poeticus* and *Tritoma floweri* better at different seasons than others did, explaining that the only difference between the two was that one of them was planted shallow and the other deep, which, I thought, accounted for the difference in their time and freedom of blooming, that being the point at issue. Now, what is Mr. Smith's reply? It is that there are *Tritomas* that bloom in June and July and others which bloom in October, and he jumps to the conclusion that our early *Tritomas* belonged to the former and the late ones to the latter variety, although I explained at the outset that the only difference between the two plantations was the positions which they occupied. What, moreover, have the different varieties of *Tritoma* to do with the flowering of the *Narcissi*? Why does Mr. Smith not deal with them? Have we got a late and early variety of these also? and did the two sets of plants change their natures after they were taken out of the same sack, so to speak? I also wrote that the *Narcissus* bulbs had been shallow-planted and exposed for years to the severity of the winters, and Mr. Smith asks me to wait and report after the first hard winter, thus showing that he has not even read the article which he professes to criticise. I am aware that there are varieties of *Tritoma*, and I have them both from division and seed, but the *Tritomas* about which I wrote belonged to the same variety, and that is what Mr. Smith has to deal with, not hypothetical explanations of his own invention.

The fact, however, of certain varieties of *Narcissus* not blooming so freely as could be desired in all situations is acknowledged by those who know most about them, and the question is,



Climbing Rose on an old Catalpa tree in the late Mr. Bohn's garden at Twickenham. (See p. 392.)

Canary Creeper in autumn.—I have seen no fresher looking open-air flower than the Canary Creeper this autumn. It blooms as freely now as at an earlier period of the season, unmindful of cold nights and heavy rains. Whether covering a trellis, rambling over bushes, or trained round Pea sticks, this well-known climber is always effective. Were it more difficult to grow, it would probably be more thought of, but it happens to be one of those things which demand no more cultural care than proper preparation of the soil

Why that is so In cold and late districts I say that deep planting is the cause and shallow planting the cure, and the proposal made by another correspondent, "Delta," I think, to dig the bulbs up in summer to ripen them, is just another way of accomplishing the end in view for ripening the bulbs, only the digging-up plan is impracticable in gardens generally.

I am prompted to ask if Mr. Smith has any bulbs in his garden of the kinds he mentions, as I notice that he has not a single fact of his own to record having any bearing on the subject. His allusions to planting at the North Pole indicate that he has lost his bearings, and I do not intend to follow him there. I, however, press for an explanation of the free-flowering habit of the shallow-planted Narcissi, seeing I am prepared to vouch for the fact. Those who would dispute the influence of the sun and air in ripening tubers and bulbs have their work cut out. We know Potatoes are best to eat that are not exposed; but it is also known that a Potato that has been greened in the sun is not only so changed as to be unfit for food, but to make the best and hardest set for future propagation; hence the custom of greening Potatoes for seed. It is the same with bulbs and other things. Shallow planting brings them within the influence of the ripening agents, and with good results. J. S. W.

DAFFODIL NOTES.

THE GREAT MOUNTAIN OR GIANT DAFFODIL.—"Veronica" (p. 378) expresses surprise that I should ask your readers to believe that the form of *N. incomparabilis* figured in Hale's "Eden" is the same as the Sir Watkin chalice Daffodil. Allow me to explain that my words had especial reference to the bulbs which are forthcoming from the other district in Wales, and which are believed to be the semi-wild variety of which the Sir Watkin is the larger garden form. If anyone will compare, side by side, the drawing supplied by the Rev. C. Wolley Dod, and figured in the *Gardeners' Chronicle*, April 26, 1884, and which is a perfectly truthful representation of a large flower of the Sir Watkin Daffodil, with the plate in Hale's "Eden," p. 481, the Nonpareil Daffodil, he will find the two so singularly alike, that they might pass for portraits of the same flower. Hill's description is still more exact. I had a visit last week from the florist who introduced this flower to notice in our markets, and it appears that he first sent hampers of the blooms to market five years ago, or at least two years earlier than his first purchase from Mr. Pickstone, as stated in my original note (*Gard. Chron.*, April 26, p. 553). I have before me his narrative taken down in shorthand from his dictation. His recollection of the flower goes back twenty years, and it was from previous knowledge of its market value that he was led to visit Mr. Pickstone. He also supplied bulbs to three gentlemen in whose gardens he believes they are now growing. I have since applied to one of the gardeners at the address he gave me, and have received a reply that the bulbs flowered plentifully last spring, and are as stated. I hope to verify this next spring. I laid before this man, who had had thousands of blooms through his hands, the two plates above referred to, and he at once recognised them, the one as the mountain or semi-wild, and the other the garden form of this Daffodil. He remarked that when growing, or freshly gathered, the perianth segments are separated by being slightly twisted, and this is the character given to the flower by the artist in Hale's "Eden." When, however, the flower has been a day or two gathered and in water, the perianth segments soften and flatten, and they then appear to join and overlap, as shown in Mr. Wolley Dod's picture. He also remarked that the flowers when found wild were always larger in sheltered valleys than in more exposed places higher up the hills, and it was the same with the bulbs, but that both increased in size with liberal garden treatment.

I simply offer these notes for what they are worth as contributions towards the history of this

interesting Daffodil. To Mr. Pickstone belongs the merit of its practical introduction, and he deserves the profit he has reaped. We are, however, interested in its earlier history. When spring-time comes I hope to investigate the matter on the spot. A further question arises, How did this grand Daffodil become wild? It is commonly believed to have come from Portugal, and Mr. Percival states this to be so in the *Manchester City News*. But here we have it spread over high-lying districts in two counties, and more or less throughout twenty miles. How came it there, and how did it spread? It is the same with the Tenby Daffodil in South Wales, as I find it is plentiful over a very considerable area, and not only in the old locality near Tenby. Here again we have a Spanish Daffodil wild and spread over a very extensive tract of mountainous country.

Brockhurst, Didsbury.

W. BROCKBANK.

FLOWER GARDENING AT HECKFIELD.

WHEN visiting this place a short time ago I was pleased to notice how charmingly the terrace garden looked, notwithstanding the drought from which Heckfield has had to suffer in common with many other places. I never before saw the beds in the flower garden arranged with so much taste and with such delightful effectiveness. Lord Eversley takes the greatest interest in the planting of the beds; he even takes cognisance of what some would regard as trifles, forgetful of Michael Angelo's dictum, that "trifles make perfection, and that perfection is no trifle." One leading characteristic was noticeable—viz., that there was less of the dwarf and formal-looking embroidered beds than usual, and more of grace and elegance in many of the plants employed. In the large basket vases, and also as centres of beds, were to be seen *Acacia lophantha*, *Asparagus dulcis*, *Bocconia cordata*, *Cannas*, *Ferula communis*, *Grevillea robusta*, *Humea elegans*, *Nicotiana wigandoides*, *Ricinus*, *Zea japonica variegata*, single Dahlias, Fuchsias, Heliotropes, Abutilons, and Pelargoniums. The following were used with good effect for drooping over the edges of vases—viz., Ivy-leaved Pelargoniums, *Tropæolums* of the Lobbianum type, *Petunias*, and the variegated Japanese Honeysuckle. Then of hardy plants used for edgings and groundwork there were the following: *Herniaria glabra*, *Sedum acre elegans*, *Sedum Lydium*, *Echeveria secunda glauca*, *Sempervivum montanum*, *S. californicum*, *Veronica rupestris*, and a few others. The foregoing were the principal subjects, but the best plant for groundwork is *Herniaria glabra*; this forms the principal lines, and in the case of the embroidered beds it supplies a broad and symmetrical framework, enclosing, as it really does, charming pictures, and this forms an excellent edging in winter also for the beds of choice Evergreens that are used with such pleasing effect at Heckfield. "Dot" plants, as they are appropriately termed, are much used at Heckfield. They consist of *Acacia lophantha*, *Grevillea robusta*, *Centaurea ragusina*, *Chamaepeuce diacantha*, *C. Casabonæ*, *Lobelia fulgens*, *L. Queen Victoria*, *Abutilon Boule de Neige*, *A. Duc de Malakoff*, and *A. Lemoinei*, *Aloe variegata*, *Yucca aloifolia*, and *Y. variegata*. Then there are certain tender plants used also with striking effect for edgings and groundwork, such as *Alternantheras*, that always take on rich colouring, *Pyrethrum Golden Feather*, *Mesembryanthemum cordifolium variegatum*, *Koniga variegata*, and *Gnaphalium variegatum*. Amongst Pelargoniums grown here I noticed such kinds as Mrs. Pollock and Sophia Dumaesque, representing the tricolors; The Shah and Marshal MacMahon, bronzes; Crystal Palace Gem, Robert Fish, Mrs. Laing, one of the best of the silver tricolors; Prince Silverwings, Happy Thought, Princess Alexandra, May Queen, Flower of Spring, Lady Plymouth, and Manglesi. Flowering plants include *Petunia Shrubland Rose* and seedlings; *Tropæolum Bedford Rival* (dwarf) and *Perfection* (climbing); *Verbena Purple King*; *Viola* Mrs. Grey, white; True Blue, Blue Bell, and

Yellow Dwarf; Zonal Pelargonium Waltham Seedling, Henry Jacoby, John Gibbons, Bonfire, and Master Christine as one of the most useful pinks for the purpose. R. D.

NOTES ON HARDY PLANTS.

GAULTHERIA PROCUMBENS.—There is nothing very striking about this American evergreen creeper, but for all that it is very useful and pretty, and it would be hard to name many better things for growing either on flat surfaces or on rockwork where there is peat. It never seems to be out of flower, and for a good part of the year it bears bright-coloured berries. Moreover, its foliage is always pleasing and crisp, shining and variously tinted with shades between green and red. In a barrowful of peat cast into a hole 9 in. or 10 in. deep quite effective specimens may be had in a short time, for it is a rapid surface rooter. The wonder indeed is that it is not more grown than it is. A ready way of establishing it is to form a dip in rockwork, and fill it up with half-decayed Cocoa-nut fibre in which a few roots may be pressed firmly, and small stones placed over them. In two years all will be covered with tinted foliage and fruit. As the old fibre settles, fresh dressings should be applied, preferably of peat and sand.

SWEET-SMELLING PLANTS.—The seed vessels of *Hypericum orientale* contain a powder having a spicy fragrance, of which one is sensible a long distance off. *Eupatorium Fraseri* smells like "new-mown hay." The common Fennel when seedy and yellow has lost its rankness, and then strongly reminds one of the sweet and wholesome smell of Caraway seeds. But there can be few scents more pleasant than that of the sere leaves of the Rudbeckias, especially of *R. intermedia*. These have been so desirable, that they have been gathered dry and used for winter scent jars. There are other kinds of sweet materials (by which term I do not mean such plants as are naturally scented in their verdant state, as, for example, the *Monarda*, *Cedronella*, *Santolina*, *Mimulus*, &c.) which are worth growing where there is plenty of room for the sake of their pleasing exhalations in autumn, and more or less throughout winter.

SAXIFRAGA (MEGASEA) PURPURASCENS.—One is bound to stop and admire the rich colouring of this fine plant. This dry autumn the leaves of young plants scarcely a year old from root cuttings have coloured almost as finely as those on older plants, and they are of a clear vermilion and very effective. It may be useful to say, however, that they only assume fine autumnal tints when grown well exposed to sunshine, and if the situation is rather dry all the better. Rockwork having a south aspect would suit this Saxifrage admirably. What a fine painting it would make!—leaves green, coppery red, vermilion and yellow, all existing at one time on the same plant.

LINARIA ORIGANIFOLIA.—This, one of the brightest and most enduring plants grown, flowers freely from early summer to October, and latterly it has weekly grown brighter and brighter, so that at present its lilac or soft purple blossom is simply a mass, hiding not only the leaves, but also every other part of the plant. It is less than a foot high, and has a twiggly and procumbent habit. It would seem to be a rock plant, but I have only grown it with such results as the above in a flat bed of black soil, where moisture is never wanting at the roots, but the situation is quite open, with the exception of a dwarf shrub on its west side.

COLCHICUM MAXIMUM.—This is, perhaps, the most effective of this genus of naked flowering bulbs. Its strong points are stoutness, great size, reddish purple colour shading off to lilac inside the perianth, and to wallflower or mahogany on the outside of the tube; it dies erect, measures 4 inches or more across in sunshine, lasts in good form a fortnight, and flowers a long while in succession from the same bulb; it is one of the latest, and conveniently adorns the little corner left dark by the "gone-out" lights of *C. speciosum*. With

me all the Colchicums have flowered earlier this year than usual, and the bloom has not been quite so fine. I imagine the earliness to be owing to the hot season, and the second-rate flowers to the lack of moisture at the roots, for in digging about them a few days ago I observed at the depth of 5 inches or 6 inches a stratum of dust-dry earth, and in transplanting I find this condition to be general in borders.

SEDUM SPECTABILE, of a bright, warm, rosy colour, has been a centre of attraction for many weeks; its flat corymbs of bloom are slow to develop and as slow to fade, and all the while the bees and coloured butterflies have enlivened them with their presence in great numbers. Wherever honey plants are in request this and the allied varieties of *Stonecrop* are worth bearing in mind.

ONOSMA FRUTICOSUM.—This has pretty flowers when examined, and to this plant belongs the good quality of bearing blossom all through the summer; and perhaps at no time have plants of it been better furnished with flowers than in the latter half of October. But the golden tubes, though more than an inch long, are not conspicuous—in fact they have a half-developed appearance; the leafy stems, large calices, and numerous young buds all help to hide the coloured portion, otherwise it rather resembles *O. tauricum*; but if a freer grower, it lacks the effect produced by the more prominent blossom of that species.

ANTHERICUM LILIASTRUM.—In transplanting this it transpired that self-sown seeds of two years back had stocked the plot with young roots, formed of well-developed fleshy radicles, and resembling young star-fish. This has happened on a raised bed of light, black soil fully exposed to the sun. This Lily is not yet appreciated as it should be, not but that it is well known to be easily grown and increased, and to be one of the best white flowers in its season; but it has not yet been taken in hand for winter forcing, as it should be, by hundreds, like the Roman Hyacinth and Valley Lily. It forces admirably, and the way in which it goes to rest so early and entirely gets us over one of the chief difficulties which we have to encounter in the case of some home-grown roots. Still, it would not be a good plan, according to my experience, to take even large roots for potting without some sort of preparatory culture. Big clumps would not only be unhandy, but the crowded state of the crowns would make too much Grass, and there would be a want of vigour, even when but little forcing was actually done; but if the method by which single crowns of Lily of the Valley are had so plump and fibrous is adopted, all will be changed, and the results a good spike and foliage of good substance, reminding one of a miniature white *Amaryllis*. I have grown single crowns in this way for several years, taking stock clumps for dividing purposes, and allowing each crown a year's growth in light rich earth, removing all scapes as they appear. Thus treated this plant would astonish its friends if they could see its regular arrangement of wheel-spoke-like radicles, furnished with a mat of fibre which would cover a dinner plate. There is, indeed, no comparison between young prepared roots of this class and big old roots, which seem to live on one another. Potting may be done from August to November. Unlike bulbs, they may be started as soon as potted.

OURISIA COCCINEA.—This still produces flowers at once brilliant and effective; it is one of those good plants which everybody admires, and it never looks shabby, even when flowerless. It is said to be shy, and I never saw it in what we often speak of as a mass of bloom, but over the neat foliage, densely grown and of a light, shining green, a spike or two here and there of its richly coloured blossoms are so telling as to leave little else to be desired. It only seems to succeed in moist and shady quarters. I grow mine in a mixture of coal ashes and what is practically chopped clay, on the north side of a dense hedge. The surface-creeping stems, which seem to get quite out of the ground in a year or two, are all the better for being divided and set deeper. I have often tried this in pots in a cold frame, in order, if possible,

to get a greater proportion of bloom, but it never did any good; the leaves turned black, whereas in the open they usually keep green, more or less, all winter.

MANY HARDY PLANTS suddenly die about this season, though they have been perfectly healthy up to the day on which they collapse. The large, thick-skinned grub which burrows in the surface soil and lodges about the collars of plants is seen to be the cause of much of this mischief. It is well to periodically look over the rarer hardy plants in order to see that they are not eaten. Yesterday from seeing the soil lifted in the pots of *Gentiana ornata*, which, by the way, is yet in flower, *Saxifraga Macnabiana*, and some double *Gorse*, the intruder was found. If not looked after now, grubs of this kind can do a deal of harm before they change their state in spring. As the autumnal rains charge the pots plunged in the open with moisture,

WORMS make their way into pots, and often among such things as *Primulas* commit great havoc; the alpine species cannot endure the pots being clogged. The advantage of sand as a plunging material is felt in nothing more than in that it allows the trowel to cut an inch or two lower than the pot's bottom reaches, so that the vacant space not only helps more perfect drainage, but prevents worms making their way up into the pots. Small worms often get into the pots at potting time and do mischief. A general overhauling now will pay where there is a valuable collection of hardy plants plunged. J. WOOD.

Woodville, Kirkstall.

NARCISSUS BICOLOR HORSEFIELDI.

IN THE GARDEN for last week (p. 381) Mr. Brockbank states that "at the Daffodil conference it was stated by Mr. Burbidge, on the authority of Mr. Percival, the president of the Lancashire Botanists' Association, that it (*N. Horsefieldi*) was a chance seedling"—a statement which I did not make, nor did I mention Mr. Percival's name in the matter. What I said at the Daffodil conference anent John Horsefield's Daffodil was this (see THE GARDEN, April 5, p. 285): "The late Mr. Leeds, of Longford Bridge, Manchester, gave us no information whatever (*i.e.*, as to hybrid or seedling *Narcissi*) nor did the late John Horsefield, the Lancashire weaver, who raised the bicolor Horsefieldi Daffodil, decidedly one of the most robust and beautiful of its race." Thus, instead of my remarks at the conference tending "to rob John Horsefield of the merit which attaches to the raising of a florist's flower," as Mr. Brockbank says they did, the raiser was given all credit; indeed, I characterised his production as one of the "most robust and beautiful"—no mean honour surely, merely regretting, as I still do, that Horsefield did not leave us some record of how such a beautiful flower was produced. I am quite as much concerned about the credit belonging to the raiser of a beautiful flower as anyone could be, but I am none the less anxious to prevent my published statements being mis-represented, especially as Mr. Brockbank has dragged in Mr. Percival's name in a most unwarrantable manner. F. W. BURBIDGE.

NEW CHRYSANTHEMUMS OF 1884.

NOTWITHSTANDING the many varieties of the florist's *Chrysanthemum* that now exist, new sorts still make their appearance annually, and this season the list of novelties seems to be longer than ever. The majority of these have some distinctive character, and as a rule are improvements on older kinds. The following are the names of the new sorts contained in the comprehensive collection of both new and old kinds in the Royal Exotic Nursery, Chelsea:—

LARGE-FLOWERED CHINESE VARIETIES.—*Madame Féral*, glossy white, and *Carmen*, deep red with yellow centre.

VARIETIES WITH FRINGED FLOWERS.—*Diamant*, fiery reddish crimson; *Elise Layellon*, flame-red; and *Etincelant*, reddish crimson, shaded with brown.

JAPANESE VARIETIES.—*Anna Délaux*, flame-red; *M. Cochet*, silvery white, tinted with rose; *Frizon*, canary yellow; *Colibri*, deep crimson; *Souvenir du Japon*, rosy lilac, with a golden centre; *John Laing*, deep reddish crimson; *Fleur des Bois*, deep blood red; *Emblème*, deep crimson, striated with yellow; *Beauté des Jardins*, bright amaranth, shaded with violet; *Fernand Féral*, rosy mauve; *Belle Alliance*, deep red, yellow centre; *Madame de Sevin*, rosy lilac; *Sœur du Cair*, red bordered with yellow; *Erise du Matin*, rosy mauve with a white centre; *Aurore Boréale*, flame red; *M. Comte*, reddish violet; *L'Or de France*, deep yellow; *Mignon*, rose with a paler centre; *Mdlle. Antoinette Brunel*, white and rosy carmine; *M. Leon Brunel*, deep yellow tipped with reddish brown; *M. Roux*, tawny yellow; *Rubra perfecta*, reddish crimson; *M. Urgel*, reddish scarlet; *Madame Urgel*, pale rose; *L'Ami*; *Boucharlet aîné*, amaranth shaded with violet; *Jonquille*, yellow; *Boule Dorée*, sulphur-yellow; *Chinoiserie*, reddish maroon; *Blanche neige*, pure white; *Hébé*, rosy lilac tipped with white; *La Géante de Valence*, rosy lilac; *L'Alsace*, deep violet-red tipped with white; *Cendrillon*, rosy peach; *Lorraine*, bronzy yellow; *Incarnatum*, deep rose passing to white; *Cérès*, canary yellow; *Formosum*, amaranth-red; *Boucharlet aîné*, maroon-red; *Commandant Rivière*, tawny yellow; *Docteur Creveux*, rosy peach; *Ganymède*, greyish lilac tipped with white; *Ruy Blas*, fiery reddish crimson; *Galathée*, pale rose suffused with white; *Le Niger*, deep slaty red; *Camieu*, bright rose passing to white; and *William Robinson*, a kind with large shaggy flowers of a peculiar shade of chestnut-brown, distinct and fine. This sort was figured in THE GARDEN last April.

These new sorts, like the rest of the collection, are at present in the height of their flowering season, and being all grown together in one capacious house, the relative merits of each sort may be seen at a glance.

Cineraria maritima, with its silvery foliage, is a most useful plant for cutting; when flowers are scarce very effective arrangements may be made by means of foliage alone, and the silvery serrated leaves of this *Cineraria* contrast beautifully with the dark bronzy leaves of *Berberis Aquifolium*, and with some of the bright coral berries of the *Gladwyn* (*Iris foetidissima*). Thus not only can a pretty, but a very lasting bouquet be made. On poor stony soil the leaves are far whiter than on rich soil, for if grown too strongly they assume a greenish hue.—J. G. H.

Lavender when young is much more floriferous than when old. I would therefore advise anyone having old plants to take them up now and divide them into as many pieces as can be got with roots attached to them and replant them. Bury them right up to the young wood, as they root freely from the old wood. A quantity thus treated and planted in poor stony soil has produced three good crops of bloom, and continues even thus late in the season to send up fresh flower-spikes, while old plants produced but one crop of blooms.—J. G. H.

Daffodil catalogues.—I am greatly obliged to Mr. Engleheart for noticing my little efforts in the distribution of Daffodils. I have been a lover of the Trumpet or Ajax section for years. I remember buying Horsefield for 15s. or 20s. per 100. I grew it, and gave it away to friends as a gift, never put it in my trade list until the last three years, and yet I look upon this Daffodil as one of the finest spring flowers grown. The blooms, associated with *Adiantum farleyense*, make one of the finest sprays a lady could wear in spring. This Daffodil lasts for weeks in water if cut in the bud state and kept in a cool room. With reference to *Narcissus princeps maximus*, I doubt very much if I will not be asking some of the experts to give it a new name; indeed, I am surprised if it comes under the head of *princeps* at all, the perianth being much stronger, the blooming later, the flowers larger, and the trumpet wider than that of any form of *princeps* with which I am acquainted. To

my mind the great advantage which princeps has is its earliness. My first blooms were cut last season, the first week in February; what we want now in Narcissi are the white ones of Spain—the cernuus class. It is useless writing in English to the Spanish. I got a consignment of what I believe to be a variety of *Pancratium*, or if not a giant *Leucojum*, or some such thing for Daffodils. Now for a bit of information to travellers in Spain. Let them ask the natives for *Mansanillas*, and they will be on the track of white Daffodils.—W. B. H., *Cork*.

Narcissi abroad.—"Veronica" wishes to hear (p. 378) where Narcissi are most luxuriant and abundant in their native habitats. I can speak for Tazetta, for when in Corsica I one day saw a sheet of white in the far distance, and well remember greatly wondering what could possibly give rise to the very curious effect this presented. You can judge of my surprise on finding that for certainly many acres the ground was literally covered with *N. Tazetta*. So closely were they growing, that it was easy to gather half-a-dozen blooms in one handful. The scent from such a mass of flowers was something to remember, even in Corsica, where the air is always filled with a most delicious aromatic fragrance.—A. K.

Violets and drought.—That Violets are moisture-loving plants is proved by the fact that the blossoms are unusually scarce and dear just now. The common blue kinds are grown in quantity by market gardeners and florists for the supply of shops, and they usually furnish great quantities all through the winter months. Violets commence to flower very early in this district. This year has been unusually dry; we have had not only a hot, dry summer, but an exceptionally fine dry autumn that has brought out most flowers in perfection, but Violets have not been proportionally benefited; indeed, they have been injured by the drought. The leaves have been infested by red spider, the plants are later in flowering than usual in consequence, and the quality of the flowers is inferior to what it should be.—J. G. H.

Lobelia fulgens cardinalis.—Accompanied by a number of garden friends, I went to see Mr. H. Clibborn's 200 varieties of *Chrysanthemums* to-day, but we were all first very much struck with long lines and beds of this *Lobelia*, that THE GARDEN has often commended, but that in my travels through English or Irish gardens I rarely meet with, as here, in quantity. I think I may safely challenge any reader to name any hardy plant that will compete in brilliancy and intensity of colour with this in the last days of October. I ought to qualify the word "hardy," for in severe winters a heap of coal ash, or better still, some barrowfuls of short stable litter, would be desirable to spread on the beds. Division is the ordinary method of increase, but propagation from seed is very easy also in early spring. For the past five months these beds have been masses of the deepest crimson-scarlet.—W. J. MURPHY, *Clonmel*.

Viola Mrs. Gray.—"J. C. C." says this *Viola* is not suited for spring bedding in the west of England; he might have stated clearly the county to which he alluded, also the character of his soil, and especially the culture which the plants received. As the raiser of *Viola Mrs. Gray*, and knowing how it was had, I know that under poor culture it will develop a little blue, but many thousands of visitors saw it growing here long before the public had it, and it was, and is now, admired as really a good hardy white. We planted in April, 1882, two borders containing over 3000 plants; they were a sheet of white throughout the whole season, stood the winter of 1882 and 1883, bloomed from spring to autumn, 1883, and by referring to THE GARDEN "J. C. C." will see what I sent gathered from the open, clearly proving its hardiness and earliness.—J. GRAY, *Eglington Castle*.

5269.—Blue Passion-flower.—"S. K." will find that the best course to pursue with regard to his blue *Passion-flower* is to leave it as it is for the winter, and to prune back in spring just

before it breaks; then all the young shoots of the present year may be cut away, and only just the leading branches left, as this *Passion-flower* flowers on the fresh growth. The latter may be thinned out as it forms, and only sufficient laid in or kept to fill the space required without being crowded. Although considered hardy, the blue *Passion-flower* often gets much cut up during severe winters, and sometimes killed outright. Therefore, as "S. K." values his, it will be well to protect it in some way if sharp weather sets in. This may be done by tacking or fastening a mat in front of it, and it is a good plan also to put some Cocoa-nut fibre about the collar and over that part of the roots; by doing so, if the top gets killed, the plant will break again and grow almost as freely as ever.—S. D.

List of flowers in bloom at Worlingham Hall, Beccles, Suffolk, on November 2, 1884:—

Winter Cherry	Ivy
White Scotch Brier	Single Pyrethrum
Rudbeckia	Yellow Daisy
Sunflowers, double	Scabious
single	Corncockles of all kinds
perennial	Petunias of 4 varieties
Delphiniums, two	Antirrhinums
Verbenas of all kinds	Periwinkle
Large white Daisy	Sweet William
Double white Pyrethrums	Mignonette
Japanese Anemones, 2 kinds	White Eschscholtzia
Dahlias, single and double,	Carnations, 3, pink, white,
21 kinds	and Clove
Salvia, scarlet, in fullest	Pansies
bloom	Blue Campanula
variegated leaved, ditto	Godelias
blue	Zinnias
Nasturtiums of all kinds	Violets
Gazania	Mesembryanthemum
Giant Musk	Calceolaria
Stocks, red and white, single	Laurustinus
and double	Thrifts
variegated	Violas
Chrysanthemums, double	Coreopsis, 2
summer	Gaillardia picta
single	Borage
Gladiolus, <i>branchleyensis</i>	Lavender
Lobelia	Wallflower
Several kinds of Petunias	Solanums
Marigold, African	Forget-me-nots
French	Heliotrope
Purple Phlox	Geranium Harry Hieover
Purple and scarlet Pentstemon	Crystal Palace Gem
Canary Creeper	Prince Bismarck
Chrysanthemums, 3 kinds	Lord Palmerston
small double	Bluebell
Sedums	Mrs. Paul
Alyssum maritima	Mdme. Vaucher
Pink Hollyhock	Dr. Edwards
Cineraria maritima	Jay's Seedling
Ageratum, white	Rose Géant des Batailles
blue dwarf	Mdme. Alfred de Rougemont
Arbutus	Gloire de Dijon
Pampas Grass	Monthly Rose

We live within seven miles of the sea, and have as yet had no lower degree of temperature than 32°. Most of the Dahlias are unsheltered; one bed has a fishing-net over it, and is as gay as it ever has been.—M. F.

The Flame Flowers (Tritomas) in 1884.—These plants have flowered extremely well during the present year, and have great value in all warm soils in hot seasons. Some years ago the hard frosts destroyed a great number, but let us hope plants will be not less abundant for that. By division of the roots they are not difficult to increase, and new groups and combinations of them should be made. We see too many of the common *T. Uvaria* kind, and all who care for these fine plants should make an attempt to get some of the other species, such as *T. Rooperi*, *grandis*, *Macowani*, *sarmentosa*, and *caulescens*—the last a fine bold plant for a warm bed or border. It seems hardy all about the home counties, but I have no experience of it in northern districts. *Tritoma Macowani* is a very pretty little plant, much dwarfer than the old kinds, and very graceful in habit. The flower is of a fine orange and yellow, particularly brilliant in the evenings. It seems quite hardy, and is a plant of the first class. When plentiful enough, it should be grown in little groups, well placed and well treated, and not scattered about in the usual way in which hardy flowers are often arranged.—V.

Narcissus pallidus præcox.—Mr. Barr's remarks as to what is termed bicolor in Daffodils I cannot attempt to dispute. What I mean by

bicolor is two-coloured. If I can correct so far, what will certainly cause confusion in spring, in the case of two forms of early Italian Daffodils, I shall, I hope, have done some good. Some new Italian varieties—viz., the King and Queen of Italy—are not procurable, I am sorry to say, and yet I do not believe they can possibly be finer than our Emperor and Empress, though said to be superior. I expect there will be a great rush for these Italian Daffodils next season. I myself have planted ten or fifteen varieties of the incomparable class, both double and single forms.—W. B. H., *Cork*.

Marie Louise and Neapolitan Violets.—The Marie Louise is thought by some to be a great improvement on the old Neapolitan. If earliness alone be considered important, this opinion may be correct; but if general excellence is the test, then I think the Neapolitan still bears the palm. Some growers tell us that it will not bloom well in early winter, but if well cared for in summer it will yield an abundance of bloom all through the dreary months of winter and right on through the spring, and as regards fragrance, no other variety can compare with it. I send you blooms from plants which came into full bearing only ten days later than Marie Louise.—JOHN CRAWFORD, *Coddington Hall, Newark, Notts.*

* * The blooms sent were long and stout in the stem, large in size, and good in colour, and last, but not least, deliciously fragrant.—Ed.

Aster Chapmanni.—I am glad to see that "K." (p. 371) has drawn attention to the fact that the *Aster* sold in nurseries by this name is not the true species, but probably a variety of *A. turbinellus*. It was sent to me as *Chapmanni* from an American nursery, but I am unable to find the true *Chapmanni* in cultivation in England. With respect to *Aster Archer* Hind, as I was its godfather, I may be allowed to say a word about it. It was returned to me from Kew last year as certainly *A. lævigatus* of Asa Gray. Now in Asa Gray's "Handbook of North American Plants," published in 1876, *A. lævigatus* was made a variety of *A. lævis*, but in his new "Synoptical Flora" it is referred to *A. Novi-Belgii*. *A. Archer* Hind certainly lies between these two, and has nothing to do with *A. spectabilis*, an early-flowering *Aster* with slender stems not much more than a foot high, and both flowers and leaves not unlike those of *A. Amellus*.—C. WOLLEY DOD, *Llandudno*.

SHORT NOTES.—FLOWER.

The Shamrock Pea in autumn.—The little *Parochetus* is lovely now, a first rate late autumn flower.—G. J. Surrig.

Missing plants.—If M. Taylor will give me his address, I can send him a bush of that apparently lost *Hesperis matronalis rubra plena*.—MAX LEICHTLIN, *Baden-Baden*.

Salvia Pitcheri.—At Treillick, in Cornwall, this beautiful plant is always planted out on one of the Vine borders where it does excellently well. The adjoining border is devoted to the Evening Lamp (*Lychnis vespertina*).—C. A. M. C.

Sagittaria latifolia.—Will "J. M. Charmouth," save for me a tuber of his single variety of *Sagittaria latifolia*? The usual double form is of course not *sagittifolia*, but *latifolia*, and the single form is often shown on Japanese screens.—FRANK MILES, *Sunninghill, Shirehampton, near Bristol*.

Aciphylla squarrosa.—If "A. D. W." will apply to my friend Mr. John Wood, Woodville House, Kirkstall, near Leeds, he will be able to obtain very fine plants of the above Spear Grass. Mr. Wood having grown it for a number of years.—W. H. BROWNE, *Aldborough, Hull*.

—*Aciphylla squarrosa* is offered by Haage & Schmidt, of Erfurt, at 5s each, in their last catalogue.—P. BOSANQUET, *Ponfeld, Hertford*.

—"A. D. W." can get *Aciphylla squarrosa* from here by the dozen.—MAX LEICHTLIN, *Baden-Baden*.

Herbaceous plants.—You will be pleased to hear that we are going largely in for a collection of herbaceous plants. I was in Scotland lately and was charmed in finding on Loch Striven side whole breadths of Grass of *Par-nassus*, also in the same place the Scotch Asphodel and *Myrica Gale*. On the island of Staffa I found a large-leaved variety of *Armeria*, and on the top of same island lots of the common blue *Scabious*.—WM. MILLER, *Combe Abb-y*.

Berry-bearing plants.—In open, genial seasons like the present there is not much fear of these suffering much from the attacks of birds, and they go a long way towards brightening up the dull corners of the rock garden. The berry-bearing plants at our command for this purpose, though few in number, are well varied, and capable of being grown in almost any garden. Amongst them must be mentioned *Gaultheria procumbens*, a low-growing, almost prostrate plant, and one of the best. Its leaves seem to concentrate nearly every conceivable tint, as if catching the colour of the best of the bright scarlet berries that are half hidden, or just peep sufficiently high above the foliage to be seen at a short distance. This plant, although it grows on exposed places, never seems to bear berries so well as when grown in full shade and in a peaty soil, or with just a glimpse of the morning sun. *Vaccinium Myrtillus* with its black glaucous berries is very handsome, but inferior to the Marsh Cranberry (*V. Oxycoccus*), with its graceful creeping or trailing habit and dull red berries. *V. Vitis Idæa*, the Crowberry, with its dark, shiny, evergreen leaves and pretty purplish berries, is very handsome. *Margyricarpus setosus*, a trailing habited Rosaceous plant, with small, wiry, shining leaves, white stems, and white snow-like berries, is also very pretty, as is also the handsome red-berried *Hemiphragma heterophylla*, a Himalayan plant with a prostrate habit. The various *Pernettyas* are also deserving a place on the rockery, the variety of colour amongst them being almost endless.—K.

PHORMIUM TENAX IN WEST ENGLAND.

HARD weather or other unpleasant conditions seem to have made this plant scarce in the open



New Zealand Flax (*Phormium tenax*) in West of England.

air about London. In the south and west of Ireland it succeeds better, and in many districts in the west and south of England it even grows rapidly. At Berkeley Castle lately we were pleased to see it doing well in a bold rock garden. It might be put to noble use by the tasteful gardener who knows how to group it with his Bamboos and Pampas Grass and New Zealand Reed, as well as effectively for its own sake and alone.

Pruning Evergreens in autumn.—This is one of the worst practices I know of in the case of tender Evergreens, or indeed any Evergreens where the winters are severe. The covering of foliage appears to be Nature's protection to the trunk and limbs, and when removed these are

very apt to perish, even in the case of the hardy Laurel and Rhododendron—at least, when these two have reached a mature age. Again and again I have seen plants of these die outright when cut over late in the autumn, and no injury result from spring pruning under the same conditions. In many places in the north, Sage, Thyme, and Lavender die when cut over late; whereas, when cut in time for the shoots to sprout again before November, they take no harm. It is best to leave Evergreens alone till growth is about to commence again. Dwarf Box edgings clipped late, hedges, and low borders of Heaths, and other subjects behave in the same manner; if they do not die, they get brown and are injured. Where cutting has to be done, it should be done in time to permit a second growth, if ever so little, just to get the wounds healed or covered.—J. S. W.

FRUIT GARDEN.

FAULTY VINE BORDERS.

GARDENERS are frequently called in by neighbouring amateurs, or the proprietors of comparatively small gardens, to give advice on various queer cases, and more especially to prescribe for Vine diseases, or to explain why Vines fail to perfect such good crops of Grapes as formerly. Quite recently I have had some strange experiences among Vine borders, and the lessons to be learnt from them may, I think, with advantage be given in THE GARDEN. In one instance the Vines had been completely ruined, owing to the faulty construction of the border, and in another, although far from being ruined, the Vines had not for a long time done well owing to a considerable number of roots having wandered into bad soil, and far beyond their legitimate limit. I will first refer to the

BADLY CONSTRUCTED BORDER as it was connected with a viney fully fifty years old, and the border had been re-made more than once; unfortunately on each occasion fully one-half of the old soil had been retained, and this was the primary cause of the failure. The state of the Vines convinced me that root action must be very bad indeed, and at my suggestion a sectional trench was cut through the border, which, it should be added, is entirely outside the house. The drainage was found to be in good condition, but the border was too deep, being at places nearly 4 feet in depth. A layer of fresh loam appeared to have been placed on the drainage; next, about 1 foot of the old soil, then more fresh loam, and finally fully a depth of 18 inches of the old border soil. Labourers who assisted to form this border state that a considerable quantity of half-inch and larger bones had been evenly sprinkled over the whole of the material as it was added to the border, but we failed to find any till we came to the wall of the house, and here there were great quantities—in fact, more bones than anything else. A flue is carried along just inside of this wall, and this warming the border renders it a favourite run for rats and mice. Here also were the greater portion of the Vine roots, and probably if these had had a weekly watering, so complete a collapse as happened would not have occurred. A few comparatively lively roots were found in the rich top-dressing that had been frequently given, but these came from the stems and not from the border below, as in this scarcely a live root was to be found. Near the wall, where the border was loose and bones abundant, the roots existed and multiplied, but wherever they came into contact with the wretched inert mass of soil that did duty for a border, they perished, and this had been going on for about sixteen years. A mistake was made in the first place in attempting to form so large a border with insufficient materials, this, however, being by no means an isolated occurrence. Neither should so deep a border have been formed, my opinion being that a depth nearer 2 feet than 4 feet is most suitable. The greatest mistake of all, however, was in burying the best soil—that is to say, the good turfy loam—at the bottom of the border instead of at the top. A better plan would have

been to have mixed a liberal quantity of ashes and rough mortar rubbish with this old border soil; this compost would then have been good enough for the lower part of the border. Then supposing turfy loam to be scarce, to every two barrow-loads of roughly-chopped-up turf I would add a barrow-load of good garden soil and a good sprinkling of half-inch bones and wood ashes, or, failing the latter, a greater quantity of burnt garden refuse. This compost, well mixed, should complete the border. In this the Vines should have been planted, and in it the roots should have been encouraged to remain by simply giving rich autumnal top-dressings of good loam and manure and by mulching during summer. We ought not to induce or even permit deep root action, and therefore the food needed or sought after by the roots should be at the top and not at the bottom of the border. For my part I should prefer to make a border piecemeal; but if the whole must be completed at once, and that too in spite of a scarcity of suitable material, rather than distribute this little through a mass of inferior soil, I would concentrate it where it would be most available to the roots, and where also it could be readily renewed or supplemented at any time. The other case to which I wish to allude may perhaps be said to be corroborative of certain views that have been advanced with regard to

VINE ROOTS PREFERRING OUTSIDE BORDERS. I have no thought, however, of reviving the controversy on this subject, but merely relate what I consider to be interesting facts. The crops in a certain viney near the garden of which I have charge have for several years proved to be rather disappointing, and why this should be so has been rather puzzling, as they have for the past three years at any rate received liberal and what I consider to be fairly intelligent treatment. The Vines were not overcropped, and the border received rich top-dressings, frequent heavy waterings, and appeared to be well stocked with lively roots. They formed good foliage and matured stout, well ripened wood, yet the bunches were comparatively small, and the fairly large berries on the Black Hamburgs especially failed to colour well, shanking also being prevalent. The border was wholly inside, and the front wall was not arched with the view of some day adding an outside border. In spite of this I still thought the Vines were rooting in unsuitable material and most probably outside, and I now find that I was so far correct, though it was not clay or very cold subsoil that was doing the mischief; quite the reverse. We found, on digging down deeply in front of the house, that great numbers of the Vine roots had penetrated to the outside through both brick and stone walls, and, still more, had found their way out below the foundations. It appears that at one time water was very scarce, and all the Vine border got was collected into a tub from the roof of the house; then it was that the roots started on a voyage of discovery, but, unfortunately for the Vines, they found nothing but an open space that had been filled in principally with ashes, and what little food might have existed among this great depth of rubbish was soon exhausted. Now the water is laid on from the town supply the inside border appears to suit the roots, and it is my belief that these have fed the Vines and also the roots outside. The latter were plentiful enough and very healthy, although rambling among very poor loose material, and if they did not injure rather than strengthen, how am I to account for the crops being disappointing? Perhaps I ought not to have related this experience till next autumn, when the matter will be settled one way or the other, but next year will bring its own experiences and queer occurrences, and I prefer to "strike while the iron is hot." The occurrence may be instructive, and so also may be the description of the remedy, which I feel confident will prove effective. A trench was cut about 4 feet from the wall, all roots crossing it being unhesitatingly cut through. Next, the remainder of the soil or rubbish between the trench and wall was loosened with forks, shovelled out and wheeled away, care being taken to preserve as many

roots as possible. The front wall below the proposed level of the border was then "pigeon-holed," that is to say, a considerable number of openings were cut through it so as to give the roots plenty of opportunities of rambling outside in a legitimate manner. Wherever possible the holes were cut at the places through which the roots had already found their way in order to prevent their eventually becoming choked. In the meantime a considerable quantity of turves, some good decayed manure and bones had been mixed together, and with this a good border was formed, the roots, previously cleanly cut over and all bruised portions removed, being evenly distributed through it as near the surface as their positions would permit. A mulching of leaves surfaced with strawy litter completed the work, and by this time I have no doubt a number of fresh roots have already been formed. Supposing the Vine roots to "take kindly" to this fresh border, it is proposed to cut a trench and renovate the inside border next autumn.

W. I. M.

APPLES AND APPLE CULTURE.

THE Apple is unquestionably the most useful of all hardy fruits. In its wild state it is one of the most durable as well as one of the most beautiful of all our indigenous trees, its flowers and fruit being equally attractive. As a field crop it requires little care when once the trees are established, an occasional pruning being all that is required. If grown in the form of a pyramid it involves more labour, the cost of which will, however, be amply repaid by the increased quantity and by the improved quality of the fruit. It is difficult to say what quantity of Apples can be grown on an acre, as much depends on the soil, situation, cultivation, and also on the variety of Apple planted, some varieties being much more prolific than others. The maximum crop which may be grown on an acre has been estimated by some to be as high as 600 bushels or 15 tons per acre, an enormous crop, and one which could only be realised under the most favourable conditions. The produce can usually be sold direct from the orchard, or it may be stored at little cost, requiring no preserving, as all soft fruits do. The fruit may be used in many ways, and when ripe is equally palatable whether eaten raw or cooked. Nevertheless, though the Apple possesses so many good qualities, it has not received from those who till the soil anything like the amount of attention to which it is justly entitled. The greater portion of home-grown Apples brought into the Manchester market is produced in

FARM ORCHARDS,

and in these orchards, with the exception of those in a few favoured localities, all the trees appear to have been planted from fifty to a hundred years ago. Most of them are in the last stage of decay, the fruit being small and utterly worthless either for market or for home consumption. Most of these old trees—and I know thousands of such—are the last remaining specimens of old varieties, such as Treadleholes, Rodneys, Leatherhides, Oaken Pegs, and many other ancient sorts, some of which have been in cultivation for hundreds of years. Not only is the quality of the fruit of the worst possible description, but the quantity which such old worn-out trees can produce is quite insignificant. No wonder that the owners of such trees complain that it does not pay to grow fruit now, as the American fruit, they say, is so much finer than others, apparently quite oblivious of the fact that while the English farmer was quite content with a crop of Leatherhides and Oaken Pegs, the American farmer was planting Baldwins and Newtown Pippins, both good sorts, but certainly not better than can be grown in England if we only devote sufficient attention to the subject; at any rate, it is of no use blaming the soil or the climate. According to the returns of the year 1883, there were in England 185,782 acres of land planted with fruit trees. If we deduct 35,782 acres (a liberal estimate) for land planted with Pears, Plums, Cherries, and Filberts, there remain 150,000 acres devoted exclusively to the cultivation of Apple trees. About seventy standard

Apple trees can be grown on an acre; $150,000 \times 70 = 10,500,000$. There are probably as many Apple trees grown in hedgerows, farm orchards, not returned as such, and in farm, cottage, and market gardens as are grown on all the land specially devoted to their cultivation. This would bring up the number of Apple trees to 21,000,000—nearly one tree for every individual in England. The above calculation includes all Apples grown for making cider and all young, non-bearing trees. If we deduct one-half, it still leaves 10,500,000 trees, and assuming each tree to bear 2 bushels per annum—a very low estimate—the annual crop would amount to 21,000,000 bushels, the market value of which at 4s. per bushel amounts to £4,200,000. Supposing these to be grown on 150,000 acres, the annual value of the crop would be £28 per acre, a very low estimate, which, with good cultivation and a better selection of sorts, might easily be doubled. In fact, I do not know of any purpose to which the land could be put which would bring in so large a return for the capital employed if farmers and market gardeners only knew how to go about it. The question will probably be asked,

What is to become of all this fruit? To this I would reply, Send it to market. The demand is enormous, and if the English grower is not ready to meet it, the American, and Belgian, and German farmers are quite prepared to do so. In the year 1862 the value of raw fruit, not including Oranges and Lemons, imported into the United Kingdom was £512,284; in 1871 it had risen to £596,107; in the following year it rose to £1,024,685; and in 1882 it amounted to £2,199,158, of which amount £783,906 was for Apples; yet, in spite of this vast importation of foreign produce, good fruit is still scarce and dear. From the foregoing figures it is clear that a demand exists and is increasing in a greater ratio even than the population. Mr. John Page, in his excellent essay on the "Manchester Markets," published in 1879, says—"There are yet growers bringing their goods to Manchester market who can remember the time when they had no foreign fruit to compete with. Oranges, Lemons, and the dried fruits of the 'sunny south' were merchandise that never excited their jealousy, but it would be difficult to say in these days what kind of fruit is not imported and pitched in our markets alongside and in competition with that which is home-grown. If we had to depend solely upon the British grower now, however, I fear fruit would be a luxury out of the reach of the working classes. Up to the 16th August, 1883, the duty on imported Apples was 4s. per bushel, and in that year but 20,502 bushels were imported. The duty was then reduced £5 per cent., and the very next year 120,000 bushels were brought into the port of London alone, and the average price at which they were sold was 4s. 9d. per bushel. The importation of Apples went on steadily increasing up to the year 1846, when it received a great impetus by the total abolition of the duty; yet the price of good Apples is higher now than when the maximum duty was exacted." The cost of bringing Apples from America to the Manchester market is 1s. 3d., and from Belgium 6d. per bushel; so that if one acre produced 140 bushels, the carriage alone would amount to £8 15s. from America and £3 10s. from Belgium per acre. The English grower can probably put his fruit into the market quite as cheaply, so far as carriage is concerned, as the foreign grower can put his on board the ship; so that the English grower may be said to have a protective duty of £8 15s. and £3 10s. per acre as compared with America and Belgium respectively, which sums would, of course, be doubled if the farmer could grow 4 bushels on each tree instead of 2 bushels, as estimated—"a consummation devoutly to be wished," and which could easily be achieved if those who grow Apples would plant only the best varieties and pay reasonable attention to their subsequent cultivation.

In the Royal Horticultural Society's catalogue, published in 1881, 1200 sorts of Apples are described. In the introductory observations the editor says: "A considerable reduction of the

names is to be anticipated whenever a general comparison of the varieties can be effected; but after all the discovery of synonyms that can be expected, the list will remain far more extensive than can be either desirable or useful. No sufficient reduction, however, can effectually take place until a public declaration shall be made of those sorts which are undeserving further cultivation." Such an opportunity occurred at the Apple congress held at Chiswick last year, and though many synonyms were undoubtedly discovered, there were also many new varieties added to the already too extensive list; so that now we have from 3000 to 5000 names, though I very much doubt if we have anything like as many varieties.

SEEDLINGS AND THEIR TREATMENT.

Many Apples, including some of our best kinds, have been raised by chance, but there is no doubt that the process of artificial hybridising is the most certain way of obtaining new and improved varieties. To have a fair chance of success, the operator should select, for the seed-bearing parent, a tree of good vigorous habit, the fruit of which comes nearest to the standard of excellence to which the raiser desires to attain; he should then fertilise the flowers with the pollen of another good variety from which it is desired to obtain a cross. Selection is of great importance in raising new varieties, as the seedling always partakes more or less of the character of its parents, the qualities of which are concentrated in the embryo when it has arrived at maturity. The flowers that are to be artificially fertilised should have the anthers removed with a pair of sharp-pointed scissors immediately after they expand, and if the desired pollen is not ripe, the flowers should be carefully enclosed in very fine muslin bags to exclude insects, and also to prevent pollen being conveyed to the stigma by the action of the air. The style, or stigma, will remain vigorous for a considerable time if unimpregnated. Care should be taken to select the seed not only from Apples of the most desirable shape, colour, and size, but also from the most perfectly ripened specimens. Select the largest seeds, which may be sown in the open ground in March or April. A friable loam is the best soil for the purpose, but any kind will do if well drained and properly prepared. In the following autumn they should be planted in rows from 12 inches to 15 inches apart each way. Two years afterwards they may be transplanted where they are intended to produce their fruit, and for this purpose 6 feet will not be too much to allow between the plants. The best way of treating them is to encourage vigorous growth by high cultivation, and then to give them a check, either by root-pruning or transplanting; this generally has the desired effect of inducing them to form fruit buds. In order to save time in fruiting seedling plants, many growers prefer to graft the strongest shoots on Paradise stocks, or on old and healthy free-bearing Apple trees. Seedling Apple trees should be kept for two or three years after they first bear fruit, as the latter often improves with the development of the tree. If the fruit of the newly raised variety is not in some respects an improvement on existing varieties, the new kind should not receive a distinctive name, nor should any trees be grafted from it, as it is not desirable to increase the number of varieties unless some advantage is to be gained by doing so. Dessert Apples should be sugary and rich in flavour, the flesh firm, crisp, and juicy, the fruit of medium size, handsome in form, and better if highly coloured, as such fruit always produces a good effect on the table. However, it does not by any means follow that the handsomest Apples are also the best in flavour; in fact, it is very often the reverse. We may take, for example, Cellini and Emperor Alexander, both highly-coloured varieties, yet not sufficiently rich in flavour to entitle them to be classed as dessert fruit.

Apart from its merits as a dessert fruit, the Apple is of still greater value for cooking. For this purpose the fruit should be large, firm in flesh, juicy, tart in flavour, and when cooked should shrink but little, and should retain its form, but should be easily reduced to pulp when required.

Apples may be used in many different ways—baked whole, or peeled and sliced for tarts, sauce, preserves, &c. Prepared in any of these ways, the Apple is one of the most wholesome and nutritious of all cultivated fruits. Its value is increased by the fact that it can be had in perfection all the year round; indeed, it is stated that one variety, the French Crab, will keep for two years.

STOCKS.

These are raised from seed, suckers, layers, or cuttings. They have, it is believed, the power of influencing the productiveness and size of the fruit budded or grafted on them. Young stocks may be used for budding or grafting when they have attained from half an inch to an inch in diameter where the bud or graft is to be inserted. The habit of the stock should be taken into consideration in selecting the variety that is to be worked on it. If the stock grows more vigorously than the bud or scion, an enlargement occurs below the point of union; but if the scions grow more vigorously than the stock, an enlargement takes place immediately above it. In either case the tree is usually rendered more fruitful during its term of existence, which, when the stock grows slowly, is frequently of short duration. It is, therefore, important to employ stocks the growth of which is similar to that of the tree from which the grafts or buds were obtained. The stocks generally employed are the Crab, the free stock, and the Paradise. Crab stocks are raised by sowing seeds of the wild Crab. Apples worked on this stock are the most durable, the most vigorous in growth, and the least liable to disease. Free stocks are produced from the seeds of the cultivated Apple. The foregoing are the best stocks for standard or orchard trees. The Paradise stock, of which there are several varieties, all of them being of a dwarf character, is increased by layers or suckers. The Doucin, being of intermediate growth between the Crab stock and the French Paradise, which is "the smallest growing sort," is the best stock for pyramids, bushes, or cordons to be planted in borders round the kitchen garden, or in situations where it would be inconvenient to have a large tree. It exercises a dwarfing influence on any variety of Apple worked on it, and induces an earlier state of fruit bearing than would otherwise happen. The Paradise is most suitable for heavy land, but it will succeed very well in light ground if it receives an abundant supply of manure. The roots of this stock do not travel so far away from the stem in search of nourishment as those of the Crab do; consequently, the soil in which they are planted soon becomes exhausted unless liberally supplied with manure. Moreover, the Paradise stock has the natural faculty of producing its roots near the surface, a consideration of the highest importance in checking a too-vigorous growth, which seldom becomes thoroughly ripened, and unless it is, the flowers usually fall off shortly after they expand. In nurseries where Apple trees are raised by thousands every year the all but universal custom is

BUDDING,

this method being the most expeditious and certain. Budding is usually performed in July and August (any which fail to take may be grafted in the following spring), but the precise time must be determined by the state of the bark both in the case of the bud and stock. The bark in both instances must separate freely from the wood that is underneath it, for if either be deficient in this respect, there will be little chance of success. The secret of success is in having the bud and stock in a proper condition; the bud should be perfectly formed, and should be taken from the middle of a shoot of the current year's growth. Buds near the base do not part freely, and those near the top are imperfectly ripened. When both are in proper condition, the operator should choose the shoots from which he is to obtain the buds and remove the leaves therefrom to prevent loss of sap by evaporation, leaving part of the leaf-stalk to serve as a handle for inserting the bud. The severed ends of the shoots should then be placed in a bucket of water and shaded from

bright sunshine; then proceed to make a T-shaped incision in the bark of the main stem of the stock as near the ground as may be convenient. Great care should be exercised in raising the bark of the stock, for if the cambium layer is injured it becomes less capable of effecting a union between bud and stock. The bud should then be removed with a portion of bark somewhat shield-shaped, and about three-quarters of an inch in length. Remove the small portion of wood underneath the bud, and insert the latter as quickly as possible; then bind it securely with moist raffia, by passing it round the stock immediately above and below the bud. The cut part of the bark should be entirely covered with raffia or other tying material to exclude the air and preserve the bud in a moist state; thus the union will be effected more quickly than if the cut parts are exposed to the air.

GRAFTING.

This consists in placing a scion or part of a branch of one plant upon the stem, branch, or root of another, which must be of a nearly allied species. By grafting seedling plants they will produce fruit earlier than on their own roots. There are several modes of grafting, but whip or tongue is the mode usually employed. It is not only the most certain, but also the most expeditious in the case of young stocks which are of about the same thickness as the scions. The grafts or scions should be of the previous season's growth and well ripened. They should be cut off in January or February, bound in bundles, and correctly labelled; their lower ends should then be placed in sand or soil on a border in a northern aspect, or some such situation, where they will be cool and shaded from sunshine, so as to retard their growth until the sap is rising in the stock. Whip or tongue grafting is performed by heading down the stock to the desired height, then inserting a sharp knife about 2 inches below where the head of the stock was removed, and with one smooth upward cut removing a thin slice of bark and wood. About the middle of this cut a thin tongue three-eighths of an inch in length should be made by inserting the knife and pressing it downwards. The graft or scion should have three or four buds, one of which should be at the lower end to assist in uniting it to the stock; it should be prepared by making a sloping cut on the lower end to correspond with that on the stock. A tongue should be cut similar to that in the stock, but in an upward instead of a downward direction. The tongue does not assist in uniting the stock and scion, but serves to hold the scion in position until it is bound. The scion should be placed on the stock inserting the tongue of the former into that of the latter. They must be carefully adjusted, so that the edge of the inner bark of the scion will fit exactly the inner bark of the stock on one side at least; they should then be bound firmly together, but not so tightly as to injure the bark, with raffia or bast, beginning 1 inch below where the graft is put on and continuing to the top of the stock. Grafting wax or clay should now be applied to those portions of the stock and scion that are joined together. If clay is used, the stocks should be planted in the bottom of a drill so that when the soil is levelled down it would cover the clay and prevent it from cracking or falling off. If the grafts are put on too high for soiling up, and clay is used, it should be wrapped in Sphagnum Moss and kept moist. The use of wax or clay is to exclude the air until such time as a union is effected. Choose young trees of a free vigorous growth, avoiding those of a weakly, stunted character, as such plants seldom grow into healthy free-bearing trees. Never purchase fruit trees with Moss or Lichen growing on them, nor any affected with canker, American blight, or any other injurious insect or disease, but select such as have a smooth, clean, shining bark—a clear indication of health. Trees that have been budded or grafted from four to five years are the most suitable for making new plantations. Such trees should be 4 feet or 5 feet in height and well set with flower-buds. Although the first cost is greater for such trees than for

smaller ones, it will be found that they are much cheaper in the long run. Young trees should have a regular, well-balanced growth, for those which are irregular or one-sided require a large amount of time and training to bring them into shape, and they seldom develop into trees of handsome form. Amateurs who have not convenience for raising a sufficient number of young trees will generally find it best to get them from a nurseryman.

W. NEILD.

(To be continued.)

EXETER APPLE FAIR.

THIS, the first exhibition of the kind held in Exeter, was formally opened on the 30th ult. It took place in the Lower Market in Fore Street, and, although only thought of towards the end of September, a good working committee, headed by the mayor, was soon formed, who brought the affair to a successful issue. The principal object was to attract attention to the recognised best sorts of Apples and Pears, and thus conduce to an improvement in the special culture of these fruit in the county of Devon. Competition was open only to English-grown fruit, of which there were collections from Essex, Maidstone, Tenbury, Hereford, Isle of Wight, &c. The finest exhibit came from Mr. John Watkins, of Pomona Farm, Hereford. It consisted of twenty-five dishes of six fruits each, but by some mistake only twenty-four dishes were staged, and therefore it was disqualified. It contained, among other sorts, large and highly coloured specimens of Blenheim Orange, Beauty of Kent, Striped Beaufin, Cellini, Ribston, Winter Quoining, and King of the Pippins. The first prize (two guineas, given by the Vegetarian Society, Manchester) was awarded to Mr. H. Berwick, Sidmouth. Among his best fruits were Beauty of Kent, Royal Russet, Wareham Russet, Brabant Bellefleur, Blenheim Orange, and Alexandra Russet. Mr. C. G. Slater was second; his collection contained capital specimens of Gravenstein, Winter Warden, Scarlet Pearmain, Golden Noble, Buff Coat, Cox's Orange Pippin, and King of the Pippins. In twelve dishes of culinary Apples Mr. J. Ham, Budlake Farm, Broadclyst, was first; among his best fruit were Dumelow's Seedling, Hoary Morning, Beauty of Wilts, Tom Putt, Gravenstein, and Warner's King. In the class of six dishes of culinary Apples, Mr. W. Blackmore was first with sorts similar to those just named. For twelve dessert kinds, Mr. C. G. Slater was first with beautiful dishes of Blenheim, Lord Burghley, Ross Nonpareil, Old Nonpareil, Winter Warden, Ribston Pippin, Adam's Pearmain, and others. In class eight, six dishes, first prize 2 guineas, given by the mayor, fine dishes of Cornish Gullflower were among the exhibits.

FOR PEARS there were fourteen classes, but they were not so strongly represented as Apples, although some very fine dishes were staged. In class twenty-five, six dishes, five fruits each, Sir T. D. Acland, Bart., was first, the sorts being Doyenné du Comice, weighing 5 lbs. 2 ozs.; Pitmaston Duchess, 6 lbs. 10 ozs., the two heaviest being 1 lb. 9 ozs. each (both these sorts were, Mr. Garland said, from pyramid trees). The collection also contained Easter Beurré, Glou Morceau, and Winter Nelis, one of the latter weighing 10 ozs. Mr. Berwick was second with good dishes of Marie Louise, Beurré Diel, Beurré Clairgeau, Uvedale's St. Germain, and Catillac. Mr. Searle was third with Beurré de Capiaumont, Beurré Diel, Easter Beurré, Bergamot d'Esperen, Victoria, and Nouveau Poitou. In classes for single dishes, most of the above dessert kinds were shown, but magnificent fruit of Catillac came from Sir B. Samuelson, and very fine fruit of Uvedale's St. Germain from Mr. J. Blythe and Mr. T. Hussey.

In addition to the competitive exhibits there were large collections for exhibition only. Messrs. R. Veitch and Son showed 120 dishes of named sorts grown in their nursery; Messrs. Luccombe, Pince, and Co. had 100 named sorts; and Messrs. Bunyard sent 100 dishes from Maidstone. The competition was very keen in the thirty-eight classes, the whole of the fruit being exceptionally

good, 2000 dishes being staged. It may be remarked that many of the Apples were quite polished by being rubbed with a cloth, a process which detracts rather than adds to their beauty. Quite different was the appearance of Mr. Ham's dish of highly coloured Hoary Morning, covered with their beautiful thick, hoar-frost-like bloom.

G. J.

Large-sized Peaches.—Undoubtedly Mr. Rivers has distributed too many varieties, and some of them, like Lord and Lady Palmerston, with hardly any good qualities but size of fruit. Princess of Wales, although not first class in flavour, is a very useful late Peach, and almost indispensable notwithstanding its great size. On the other hand, Goshawk is one of the best flavoured Peaches grown, and an extremely good variety for forcing. Sea Eagle is another very valuable kind, but it is sour in some soils, even under glass. Golden Eagle is good, and this year has been a great success on the open wall in many places, and the same remark applies to Magdala. Early Rivers, as is well known, cracks in some soils, and in others does not. In many Cornish gardens it is a great favourite. Early Louise is put altogether out of court by Hale's Early. Besides Mr. Rivers' seedlings there are other valuable varieties, the good qualities of which are by no means widely known. They are High's Early Canada, Tippicanoe, a very free setting, good flavoured, mid-season Peach of medium size, and Frogmore Golden. This latter is one of the hardest varieties grown, and is as good flavoured as any of the yellow-fleshed kinds. Malta, again, I have seen ripening magnificent fruit on an east wall, but that was in the days when Peaches would do out-of-doors without glass copings. Two of the best late Peaches are Thames Bank and Desse Tardive, and it is a mystery to anybody who knows Marquis of Downshire that it is not one of the most popular varieties grown. Raymackers is exquisitely flavoured, but a shy bearer and bad to force. Prince of Wales, Exquisite, and Tardive d'Oullins I have never seen good, and Early Ascot, although fair, is not worth growing. A Bec and Dymond are now well known. Chancellor and Belle Beauce, if you get the true varieties, are of great utility. The very early Belle Beauce which many nurserymen supply is not extra good.—C. A. M. CARMICHAEL.

Dishonest exhibitors.—I am glad to see dishonest work at exhibitions exposed, as I have known it to be done in more cases than one. Some fourteen years ago I was foreman at a large fruit-growing establishment. The head gardener said to me one day, just before a large fruit and flower show, "I am going out this evening; should Mr. So-and-so call while I am away, show him round and let him have whatever he wants." I answered, "Yes." We had not parted more than ten minutes before Mr. So-and-so arrived, bringing with him a conveyance and a number of small hampers. He looked round, and said, "Well, it is evident I can get what I want here." He took two bunches of Black Hamburg Grapes. Muscats, he said, he had better himself, but he took two of Buckland Sweetwater, also a dish of President Strawberry, a dish of Elrue Nectarines, a Queen Pine, and a scarlet and green-fleshed Melon. These he packed up and took his departure. Next day, at the fruit show, six dishes out of ten staged were from our place—the fruit cut the night before. The other four were his own growing, and he was awarded a first prize, value £5. Everybody remarked what fine fruit Mr. So-and-so had got. No wonder, thought I, when he had two large gardens to choose from. How, I ask, can a honest grower cope with such men as that? Moreover, I am sorry to say, frauds of this kind are not confined to fruit only, but extend also to plants. A silver cup was offered for some bulbous-rooted flowering plants (the exact number I forget), and in this instance every plant staged but one was bought, and that was a potful of Lily of the Valley. The same exhibitor staged a quantity of Chrysanthemums in pots, fine plants, and, to use his own words, the judges, he said, "were rather doubtful

about them being genuine. They took hold of them, and tugged away at them to find if they were stuck in the pots." "How did you treat them?" I enquired. He said, "I put three plants into one, tied the balls together with copper wire, put them into pots two sizes larger than those they were in, and rammed the soil round them." He admitted, however, that they showed towards night that something was wrong, and thought he never would have had the prize money, but he had it, and it was paid without a murmur. In another case a gardener showed a collection of fruit and gained a prize (but not the first this time), and out of the ten dishes staged, only two dishes were his own growing. "Correspondent's" case of Peach exhibiting is nothing compared with what I have just related. I am glad, however, to find that there are still some "gardeners" left who stand up for honesty at exhibitions, and I trust that evil doing may be put a stop to.—A LOVER OF FAIR PLAY.

Tomatoes v. wasps.—"Belfast" (p. 339) recommends Tomatoes in a vinery as a prevention to wasps attacking the Grapes. I have charge of a large vinery in which Tomatoes are growing up the back wall, and still the wasps are now and have been very troublesome.—BERKS.

—The only way to preserve Grapes from the ravages of wasps is to prevent their getting at them, which can be effectively done by covering the ventilators with hexagon netting. This bids defiance not only to wasps, but also to every other winged depredator. It also acts beneficially in robbing the air of its moisture in passing through it, thus rendering fire heat less needed to keep the air sufficiently dry to insure good preservation of the Grapes. I find the hexagon netting to be the most effectual fruit protector we have for all purposes, and for cheapness and durability combined it has no rival.—R. WESTCOTT, *Raby Castle, Darlington.*

Gumming Roses.—At our last show a case of gumming Roses was discovered, and after the exhibitor had prevaricated and then confessed, he was unanimously disqualified. Afterwards, at his solicitation, it was resolved to obtain an opinion from the National Rose Society, and to reconsider the resolution of disqualification if necessary. To our astonishment, after waiting some months, we received from the hon. secretary a "decision" that the exhibitor was not disqualified, and that the medals had been sent to him. To this treatment the committee decidedly object, and have protested their discontent. Until this time we had thought the National Society represented the English rosarians, but this extraordinary action led us to doubt whether it was really a representative body. We therefore addressed a letter to about thirty of the leading Rose growers in England, and are not a little pleased to find that they strongly condemn the practice and award disqualification as the punishment, exactly as we did and exactly as the National Rose Society did not.—A. JOHNSON, *hon. secretary, Leek Rose Society.*

RECENT PLANT PORTRAITS.

RAVENIA HILDEBRANTI (*Botanical Magazine*, plate 6776).—A very elegant dwarf Palm, a native of the Comoro Islands. The plant figured flowered last summer on the shelf of the Palm house at Kew while still quite a small plant.

CRINUM LEUCOPHYLLUM (*Botanical Magazine*, plate 6783).—A very curious new Crinum of the asiaticum group. It is a native of Damaraland, in Central Africa, whence the bulb of the plant here figured was brought in 1880 by a Danish sea captain, from whom it was bought for the Kew collection, and flowered for the first time in August, 1881. It is peculiar for its very large bulb, very short, stout, flattened peduncle, and very numerous fragrant pink flowers. An exceedingly handsome variety.

DENDROBIUM ADUNCUM (*Botanical Magazine*, plate 6784).—A rather pretty Orchid from China,

with medium-sized solitary purple-lilac flowers with creamy centres.

PINGICULA HIRTIFLORA (*Botanical Magazine*, plate 6785).—A pretty little plant, native of Italy and Greece, with small purple-lilac flowers. The specimen here figured was sent to Kew by Miss C. M. Owen, of Gorey, Ireland. It has also been described under the following synonyms: *P. megaspilæa*, *P. albanica*, *P. lusitanica*. It requires the protection of a cool pit.

TULIPA PRIMULINA (*Botanical Magazine*, plate 6786).—An interesting new Tulip discovered by Mr. Elwes in May, 1882, in the Aures Mountains, in Eastern Algeria. The flower is very fragrant, with funnel-shaped perianth of a pale primrose-yellow suffused with red on the back.

IRIS HEXAGONA (*Botanical Magazine*, plate 6787).—A very distinct, tall, showy species of Iris, from the Southern United States, with large, bright purple flowers. Sent to Kew by Professor Michael Foster, F.R.S. Of doubtful hardiness, but well worth protection from frost.

W. E. G.

GARDEN FLORA.

PLATE 465.

ROMNEYA COULTERI.*

AMONG plants of recent introduction perhaps none surpass in stately beauty this fine Californian



Fruit of *Romneya Coulteri*.

Poppywort. In favourable localities it has this year flowered freely on lengths of the current year's growth fully 7 feet high, when, with some twelve or fifteen flowers in bloom at the same time, the plant has a truly imposing appearance. The flowers are of a peculiarly delicate texture, the petals scarcely opaque, and yet enduring in a good state for many days; their fragrance is equally delicate, something like that of a Magnolia. It is perennial, but not herbaceous, and the deeply-cut, glaucous foliage is retained throughout the winter. It does not appear to flower on the last year's growth, though that growth remains in good condition. The flowers are borne mainly on the points of the new shoots and on laterals nearest the points, but more sparingly on the lower laterals.

The capabilities of this fine plant have as yet hardly been fully tested in our climate, but we may consider it hardy in genial soils in our southern counties. It certainly enjoys a warm, sandy soil. One-year-old plants in a garden on

* Drawn at Munstead, Godalming, July 20.



clay have grown but poorly, while others from the same batch on a warm, peaty sand, in an elevated position, have grown vigorously and flowered abundantly, blooming continuously from the end of June to the end of September. It would probably do well in many places against or near a wall with a southern or western aspect. It seems unwilling to be propagated by cuttings or layers, and seed ripens sparingly in England, but it is now being imported from California, so that we may hope before long to see this grand plant at home in many gardens. The flower shown in the plate is one of moderate size; they are frequently larger.

NOTES FROM THE CONTINENT.

New way of growing Caladiums.—In the January number of the *Journal of the Tuscan Horticultural Society* M. Nencioni describes a method of growing Caladiums which, so far as I am aware, is not practised in this country. M. Nencioni's object is to have the plants just coming into full beauty when in a general way they have died down, and this is accomplished by starting the tubers the first year in May and June and the second year in August and September, so that in two seasons the growing and resting periods are entirely reversed, and the plants are in full growth during the winter months. It is, of course, a great advantage to have these fine-leaved plants in full vigour in the winter time, for Caladiums are almost matchless as regards decorative value, and a few well grown plants would render a warm house very attractive through the duller months of the year. One distinct advantage gained by this way of growing Caladiums should be mentioned. The task of preserving the tubers when at rest is much facilitated, as it will be readily understood that the requisite preservative conditions can more easily be maintained in summer than in the coldest months of the year.

Date Palms.—It will probably be new to most of your readers that quite 150 more or less distinct varieties of the Date Palm are in cultivation. A list recently published in the *Journal d'Acclimatation* gives nearly that number, and it is quite probable that as many more are grown by the Arabs in the oases of the Sahara. No doubt the Date Palm amongst the Arabs occupies a position somewhat analogous to that of the Apple with us, with the important difference, that the fruit of the former is a necessity of Arab life, so that surprise need not be felt, seeing how easily this Palm is raised from seed, that so many varieties of it exist. In the list referred to the varieties enumerated may be roughly divided into two classes, the one composed of those which keep well for a year, the other containing only such as must be eaten when ripe. In other respects the various kinds seem to differ considerably from each other, both as regards vigour, fertility, and colour of fruits. In illustration of this I take No. 1 on the list, the El Holonai, which is described as "tall and slight of growth; fruit of middling size, very mild in flavour, golden yellow in colour, and of excellent quality. Ripe in October, keeps well, bears twelve clusters of fruit." No. 10 is the Tadala, "low in growth, fruit large, white, dry, and much esteemed by the Arabs." No. 47 is Baar el Maar, "a big Palm bearing from ten to twelve clusters; fruit medium, green, soft, and good." No. 100 is the Robel el Madjen, a "tall-growing, robust kind, producing from eight to nine clusters; fruit large, soft, and green in colour." No. 125, the El Aden Nouri, a "tall-growing kind, slender, bearing from seven to ten clusters, the fruit being long, black, and dry." From the above examples a good notion may be obtained of how these different varieties of the Date Palm vary both as regards proportions, colour of fruit, and fertility.

Tropæolum digitatum.—Although discovered some years ago on the mountains of Merida, in Columbia, by M. Karsten, and introduced to the Botanical Gardens of Berlin, this Tropæo-

lum was apparently not in cultivation until recently re-introduced by Messrs. Haage & Schmidt, of Erfurt, who have succeeded in growing it well. According to the *Gartenflora*, in which it is figured and described, it has some affinity to *T. aduncum* and *Heynianum*, but is distinct from them. The flowers are orange-yellow in colour, with a large red spur, the division of the calyx being of a fine green, whilst the petals, which are of unequal sizes, are strongly fringed. The stamens have red filaments, the anthers being bluish green. Raised from seed in warmth in February and planted out in spring, this Tropæolum makes a fine effect in summer, or it may be raised during the summer months and wintered in a cool house. It may also be propagated by means of cuttings.

Plum Bonne de Bry.—In July of this year, M. Sellier, cultivator, of Bry-sur-Marne, brought some branches loaded with fruit of a Plum largely grown in that commune, but which, curiously enough, does not appear to have been known to French fruit growers generally, to the meeting of the National Horticultural Society of France. The fruit committee, being highly impressed with the quality and exceptional precocity of this Plum, immediately deputed some of its members to visit the locality where it grows and investigate its merits. According to the report by M. Carrière, published in the *Journal of the Society*, this Plum was a chance seedling, which came up quite by itself in a field about sixty years ago. For a long time it was but little heeded; it is only some fifteen years since that it became an object of speculation on the part of the local fruit growers, and it is but recently that it was christened Bonne de Bry. The strangest part of the affair is that for a long time considerable quantities of it have been sold in the Halles Centrales of Paris, where it has obtained a high reputation, and yet was, until exhibited by M. Sellier, absolutely unknown to such experienced horticulturists as M. Carrière, M. Baltet, and M. Lepère. No wonder then, considering its exceptional earliness, that its sudden appearance under such peculiar circumstances should have created somewhat of a sensation amongst the members of the fruit committee. M. Carrière states that the tree is vigorous and wonderfully productive, attaining a height of from 14 feet to 20 feet, with a spreading, rounded head. The branches, which are long, at first having an upright tendency, eventually spread out, and are, by the weight of the fruit, brought into a drooping position, so that the tree has some resemblance to a Weeping Willow. The fruit, which is of a fine violet when ripe, commences to ripen very early in July. The skin is smooth, covered with a beautiful glaucous bloom; the flesh, which comes away freely from the stone, is of a greenish yellow, with abundant juice; flavour excellent. The trees appear to be all growing in one particular locality, principally amongst the Raspberry plantations and vineyards, and are from suckers which spring from roots growing near the surface. So highly is this Plum esteemed in the Paris markets, that some growers make in favourable years from a few trees as much as £130, and the total average value of the crop in the district is estimated at about £2000. M. Carrière concludes his report as follows: "1. The committee of inquiry has to state that at Bry-sur-Marne there exists a variety of Plum which up to the present was unknown in the annals of pomology, although every year its fruit has been sold in the markets of Paris in considerable quantities, but without name or knowledge of its origin. 2. That it is owing to M. Sellier that the National Central Society of Horticulture of France has become acquainted with this Plum, which will be much grown, and will materially contribute to the fruit supply of our markets." The only conclusion that can be drawn from the above is that Bonne de Bry Plum is one of the most valuable hardy fruits in cultivation, probably the most important addition that has been made to them for many years. It seems to have every quality desired by the grower for profit, its remarkable earliness alone being enough

to recommend it. I would strongly urge English nurserymen and market growers to endeavour to secure this Plum as soon as possible, for it undoubtedly has a great future. There are no better judges of the commercial value of a hardy fruit than M. Baltet, of Troyes, and M. Lepère, of Montreuil, and they appear to have been much impressed with its value. No doubt M. Baltet will take prompt measures to get up a stock of it, but probably an application for grafts or rooted suckers (*drageons*) to M. Sellier, of Bry-sur-Marne, who is one of the largest growers of it, would meet with attention.

M. Carrière.—Those who are acquainted with the able chief editor of the *Revue Horticole*, or with his works, will be pleased to learn that the French Government has conferred upon him the Cross of the Legion of Honour. Probably no horticulturist living better deserves this compliment than M. Carrière, who has ever been noted for remarkable activity, great practical knowledge, and the art of imparting the same in clear and concise language. For many years in charge of the outdoor department of the Paris Botanical Gardens, he possesses an intimate knowledge of hardy plants of all kinds, their capabilities and propagation. Besides constantly contributing valuable articles to the French gardening papers, M. Carrière has written a number of works, some of which are highly esteemed. The most important are the "Propagator's Guide," illustrated, which is considered the best work of that kind in the French language; a "General Treatise on Conifers," "Encyclopædia of Gardening" ("Encyclopédie Horticole"), and "Obtaining and Fixing Varieties of Vegetables." M. Carrière's last work just issued is called "Ornamental Fruit Trees," and is a small illustrated volume of 175 pages, containing all necessary information concerning those small fruited Apples which are only useful from an ornamental point of view. In France these ornamental Apples are more planted than with us.

JOHN CORNHILL.

Byfleet, Surrey.

KITCHEN GARDEN.

CARROT CULTURE.

A DEEPLY-STIRRED and well-worked soil is indispensable for the production of good Carrots. The fine samples of the Long Surrey and Intermediate which are to be seen all the winter through in Covent Garden are grown on light loam, verging in many instances on sand. In such soils the roots have no difficulty in getting down, and consequently grow straight and handsome. It is also said that they come of a much brighter colour than where the natural staple is of a tenacious character. If the ground is not well broken to the depth of from a foot to 15 inches, the roots fork and are deprived of half their market value. There is no occasion to work light soils before the beginning of March, but heavy lands ought to be thrown up in ridges for the winter; then the frosts and winds, followed by spring sunshine, bring it into that fine mellow condition which characterises perfect tilth. Carrots should follow a crop for which the ground has been well manured, so that no manure is required for them. This is a rule invariably followed by the Surrey market growers, who would consider the dressing of Carrot ground previous to sowing as almost an act of insanity, as it is sure to cause the roots to come more or less forked and rough in the skin. If manure is applied at all it should be very old, so as to resemble earth rather than manure, when, if thoroughly incorporated with the soil, it will not produce the effects above alluded to. The greatest enemies of the Carrot are

WIREWORM, BROWN GRUB, AND FLY, the two former attacking the roots, the latter the foliage. Gas lime and a mixture of salt and soot are popular remedies for wireworm, and if the first-named is applied in the beginning of the winter it will doubtless prove efficacious without injuring the crop, but I should be loth to lay it on in spring, or if I did so it would be in very moderate quan-

ties, for it is as powerful an agent for evil as for good. Probably a moderate dressing of salt and soot applied when the ground is got ready will be found as good a preventive as anything, for both these materials are held in aversion by the insect tribe, and they are both fertilisers, the former helping to retain moisture in the soil, the latter imparting colour and substance to the foliage. So far as I am aware, there is no remedy for the grub but that of hand-picking, and this must be followed up unremittingly until the roots are large enough to withstand its attacks. Here, where Carrot culture has formed an industry longer, perhaps, than the oldest inhabitant can remember, no remedy but this has been found for the worst of Carrot pests. Should any of your readers know of any preventive or remedial measure of fairly easy application, I wish they would make the same known. Hot, dry weather is in favour of the grub in just the same proportion as it is against the plants, as from want of moisture they cannot gather sufficient strength and growing force to escape from its persistent attacks. This year it has been very troublesome, and some growers were afraid to thin out, as, the crop being already thin, there was a danger of its being totally destroyed. As soon as growers here perceive, by the drooping foliage here and there, that the grub is at work, they visit the crop every day and pick out the grubs which are sure to be found near the surface.

CARROT FLY.—With respect to this where Carrots are grown on a large scale, it is not attempted to be dealt with, for although it may check the plants for a time, a showery week or two sets them growing at such a rate as to quickly put them out of danger. It is only in harsh, dry weather that the fly proves troublesome, and then it turns the foliage to a rusty brown, or what is called foxy. By May, stored roots become dry and flavourless, and should be superseded by the young, tender, juicy French Horn variety, which, if sown about the beginning of February on a gentle hotbed, will come in by that time. This is the kind which is so largely imported into this country from France during spring, and, strange to say, although the demand for them has been constant, our market growers, instead of taking advantage of the fact, have allowed their French brethren to almost monopolise this particular branch of market gardening industry. As I have previously stated, early Carrots only require gentle warmth, but they should have a very free and rich soil. There is nothing better than old well-rotted manure, the output of hotbeds, and which is not distinguishable from earth, but this is not to be had in a general way in English gardens, although scarcely ever absent in Continental ones; therefore the most suitable material at command must be employed. If thinned out when up to about 3 inches apart, and freely ventilated in fine weather, so as to keep the foliage dwarf and healthy, the Carrots will come juicy and of excellent flavour and colour. A sowing made the last week in January and another about the middle of February will keep up a supply until the first open-air crops come in. For these a warm, sunny border is the best place, and where the soil is by nature somewhat close and moisture-holding, it should if possible get the addition of some light material, and in any case should be well stirred.

THE MAIN CROPS should be sown about the first week in April; then they get a long season of growth. If the Intermediate and Long Surrey are sown about the same time, the former lasts from October to Christmas, and the latter continues the supply through the winter until the Early French Horn again comes in. In Covent Garden, however, Long Surreys are generally in demand through May, and if that month should be cold, the market grower often gets a better price for them than in winter. It is, however, only a few of the largest growers who have them at that time of year, those who have a limited area of ground devoted to them finishing in April. In sowing for the main crop it is best to do so in drills 8 inches apart, as this admits of easily keeping the weeds down, and cleanliness is a most important item in Carrot

culture. Few things so soon suffer from negligence in this respect, and a crop which once gets overrun with weeds never again becomes thoroughly thrifty. As soon as the plants can be seen hoeing between the rows should be done, to be followed by cutting out the plants to 3 inches or 4 inches apart.

J. C. B.

WINTER CUCUMBERS.

THOSE who were able to turn out good sturdy plants into the Cucumber house any time during August or the beginning of September should now be cutting good fruit, and with care a winter's crop may be secured. Thin cropping is an essential feature in the winter cultivation of Cucumbers, as if the plants once become exhausted from a heavy yield they are a long time in recovering their strength, and stimulants cannot be resorted to, as in summer. It is probable that the unhealthy growth often seen on winter Cucumbers arises from mistaken kindness in over-feeding and in giving too much fire-heat. It is always advisable at this season to look through the Cucumber house every other day, stopping and thinning where necessary, in order to avoid the removal of a quantity of superfluous growth at one time. Some part of the plant should always be moving during the dull months. If all young growth is stopped at once, say to-day, the effect the following morning will be a yellow tinge pervading the foliage, which will not disappear until the plant is again well on the move. This may generally be managed by thinning out at intervals weakly growth, and allowing the strongest breaks to run on without stopping until the plant is again furnished with healthy foliage. The roots may be slightly sprinkled with soil as they make their way to the surface, this little occasional help being decidedly preferable to heavy top-dressing all through the winter months. I find 65° to be a good maximum night temperature all through the winter months, and unless the outdoor thermometer runs high, this point should not be exceeded. I omitted earlier in these notes to enter a protest against the distance from the glass Cucumbers are often planted, especially in small span-roofed houses. It is a mistake, and the origin of many failures. If the collar of the plant when first put out is not more than a foot from the glass, so much the better. I have found the few rules enumerated above of service in keeping up a supply of winter Cucumbers, always providing (and this is an important feature) a good healthy plant has been turned out not later than the middle of September. To defer planting until autumn is well advanced, and then to fire away sharply at weakly stuff in the hope of getting plenty of Cucumbers through the winter is time, plants, and firing wasted. An occasional slight fumigation should be given and the house kept clean, as, with care, plants that commence to fruit now can be run on until next June.

E. B. C.

WINTER PARSLEY.

A GOOD supply of Parsley is always needed both in large and small gardens. It should be provided by making sowings at different seasons of the year. This has been a trying summer for Parsley, owing to the drought which so long prevailed; in fact, Parsley crops are all but a failure in a good many gardens. I have not seen a good, vigorous bed of it this season; the plants all look sickly, their young rootlets being eaten by insects. Numerous remedies have been applied, some in the form of a liquid and some in a dry state, the latter being hoed deeply into the ground between the rows. I have used guano in both conditions with a certain amount of success. When used in a liquid state I dissolved 3 ounces of guano in a gallon of water and poured it close to the roots of the plants. When used in a dry state I sowed it close to the roots, hoeing it into the ground at the same time. Some have employed paraffin, but it should be used with care, or it may destroy the entire crop. Mix one wineglassful of paraffin with a gallon of water, stirring the liquid constantly while it is being applied. Perhaps the

most successful remedy is to procure some liquid manure from the stable, or steep some horse droppings in a tub of water, using about a pint of the liquid in each gallon of water, which should be poured close to the roots through a watering-pot having a small spout. Apply this liquid every third day for several times, when the plants will soon change their sickly colour for one of dark green, which will show that the roots are growing freely.

Those who have to keep up a continuous supply during winter, after this dry summer, will have to be making preparations either to grow a supply under hand-lights or in cold frames filled with fibrous loam, using a portion of soot, and wood ashes may also be had. These materials should be well mixed before planting. Lift the plants from the seed beds sown early in July, plant 6 inches from plant to plant, and water them with a watering-pot furnished with a rose; this will settle the soil about the roots. Keep the frame close for a few days, when the plants will soon strike roots and become strong before winter sets in. A plentiful supply may be expected during winter by covering the lights with mats on frosty nights. If thought desirable, a frame might be placed over one corner of the bed before the approach of frost; keep, however, the lights open upon all favourable occasions. When only a few leaves are required occasionally and a greenhouse at command, a few pots may be filled with ordinary potting soil and planted with plants taken from the seed beds, watering them, and place them in any spare corner of the greenhouse or upon the front stage near the glass. Fine leaves may then be had all through the winter and spring months. Fill now as many 7-inch pots as may be required for a supply late in the spring, when Parsley is often scarce. Fill them with turfy loam and a portion of rotten stable manure, together with a sprinkling of sand to keep the whole open and porous. Sow the seeds upon the surface, covering them lightly with fine soil. Place the pots in a cold frame until the seeds germinate; keep the lights close, increase the ventilation as the plants get stronger, and if required for immediate use, place them in a warm house, keeping them near the glass, when a supply of leaves may soon be had.

If there is a vinery at work during the early spring months, place a few pots in it as may be required, transferring them to cooler quarters as the leaves get full grown. Place the pots again in warmth as the crop of leaves is picked for use. During April they may be put out-of-doors and planted in a warm, sunny border, when they will produce plenty of good leaves until the earliest sowing is fit for use.

WM. CHRISTISON.

Homewood, Chislehurst.

Scotch Leeks.—I see that the remarkable size of the Leeks at the Dundee and Edinburgh shows has been the subject of comment in the gardening papers. It is quite true that Scotch gardeners excel in the culture of this vegetable. They pay so much attention to it, indeed, that one might suppose the Leek, and not the Thistle, was the national emblem; but why they spend so much time and labour in growing monstrous Leeks nobody has ever yet discovered, unless the reason be that it is a vegetable that readily lends itself to monstrosity culture. Cooks care little about large Leeks, small ones being just as good in every way, so long as there are enough of them. English gardeners, by sowing the seed in April where it is to grow, can have Leeks 6 inches in circumference, if not more, by November, and as deeply blanched as need be, and more is not required. In Scotland, on the other hand, enthusiastic Leek growers sow their seed in January or February in heat, and sometimes pot them off, planting them later in the season, as if they were tender exotics. They also bestow no end of pains upon them in order that they may produce monstrous stems, but serving no good practical purpose.—NORTHERNER.

Celery in this neighbourhood is the best this year that I have seen for many seasons; in fact, I have not seen anywhere a bad crop. There

is no trace of fly to be seen. It made its appearance just after the Celery was pricked out, but soon disappeared. Last season our Celery crop was quite white from its effects. Our soil is just the reverse of that of "W. I. M." (p. 370), being very light and sandy. Rain in this district was not particularly heavy last winter, and since March it has been very dry. We have not had a good soaking rain during the whole summer. The result is that after the surface soil is removed, which is moist about 4 inches in depth, it is very hard and dry for quite 2 feet deep in places. I cannot say that we were free from Onion maggot this season, but we have had a much better crop than usual. The maggot was a little troublesome at one time, but it never did very much harm.—GEO. CARPENTER, Rydens, Walton-on-Thames.

LETTUCES AND ENDIVE.

ALTHOUGH the season is getting past for salads, many look for them during the winter, and to have them from this time onward requires some management. Although young Lettuces will stand the winter if pricked out or planted in favourable situations, those that have turned in or are about doing so will not bear severe weather. They should, therefore, be taken up and placed under cover, the best situation for them being a cold pit or frame, as there they can be placed well up to the glass in full light and have plenty of air, both of which are essential for their welfare. In lifting it is necessary to handle the plants with great care, so as not to break or bruise their leaves, and to get them up with good balls. If this is done, and they are packed just clear of each other in moist soil pressed firmly around them, they will be but little the worse for removal. To prevent damping, advantage should be taken of every fine mild day to draw off the sashes, which ought also, except during sharp weather, to be tilted at night, but covered and protected from frost. Before using the Lettuce, unless well hearted and blanched, it is a good plan to put them, in succession a week or so in advance of the time when they are wanted, into a Mushroom house or other dark, warm place to give them a start, which will change their green colour and make them tender and crisp. Endive may be improved in the same way and wintered almost anywhere, as, so long as it is kept dry, it will do well in a light, open shed, and blanch in a dry, dark one. Young Lettuces intended for turning in early in spring should, if possible, be planted close to the foot of a south wall or on some warm, sunny border, where the soil is light and rich, as there they will winter in safety. The best sorts are the old Bath Cos and Hick's Hardy Green, both of which are very superior Lettuces, and will endure more frost than any others I know. The great difficulty many have in wintering Lettuce is in keeping them from slugs, to prevent the ravages of which there is nothing equal to air-slaked lime and soot mixed, as they can be dusted over the ground without doing any harm to the plants. S. D.

SHORT NOTES.—KITCHEN.

Brussels Sprouts are hereabouts dreadfully blighted this season, and so is, indeed, all the Cabbage tribe.—G. C., Walton-on-Thames.

Celery fly last year was in many places most destructive. Now here we are in the middle of October and I have not yet seen or heard of the least signs of our old enemy. Certainly at this time last year every leaf on our Celery was punctured by this insect; now it is perfectly free. I should like to ask what are the conditions that bring into action such a troublesome enemy. Are its habits in early life sufficiently well known to enable gardeners to grapple with it so as to destroy it altogether, or at least check its progress.—J. C. C.

Jerusalem Artichokes flowering.—We have a long row of these Artichokes now in full bloom. Their height ranges from 10 feet to 12 feet, and the points of their shoots are well furnished with bright yellow flowers, which when cut may be used with good effect for dinner-table decoration or for filling vases for ornamenting ordinary rooms. I have only seen this tuberous *Helianthus* in flower upon one occasion before. It must have been the extreme heat and drought last summer which have caused it to flower more freely this year than usual.—WM. CHRISTISON, Homewood, Bromley.

Rowsham Park Hero Onion.—I see (p. 274) that "R. D." speaks well of this Onion as seen at Dundee, and I am glad he has stated its average weight; 1 lb. is a good weight for a spring sown Onion, but it is not unattainable by other standard varieties. In February last I had several ounces of Webb's Improved Banbury Onion from Stourbridge. It was sown on the 18th of March, and last week I sent a specimen to Messrs. Webb, the produce of this seed, weighing 1 lb. 3 oz. It was dried and cleaned before weighing, and as handsome a specimen of an Onion as I have ever seen. It was grown with others of almost equal merit on a piece of land 30 yards wide and 40 yards long, and received no special attention. I have grown this Onion for half a dozen or more years now, and in my opinion it is one of the best in cultivation for sowing in spring.—J. MUIR, Margam.

ANIMAL MANURES IN GARDENS.

THE use of animal manures in gardens is a subject of some importance. "X. Y." (p. 376) may indeed be congratulated on his success in being able to grow, for a period of fifteen years, a satisfactory rotation of kitchen garden crops without the aid of animal or artificial manures. Undoubtedly he must be favoured with soil of great fertility; but perhaps he does not follow up what many gardeners are obliged to do, viz., keeping up a supply of vegetables from a limited space of ground and by a constant rotation of crops. Many gardeners are obliged to do this from soil that has been under vegetable cultivation for fifty or sixty years, and I do not think "X. Y.'s" method would answer under such circumstances. I quite disagree with him as to animal manure, when properly applied to certain crops and at the right time, spoiling their sweet and proper flavour. On the contrary, when the soil becomes impoverished through constant and regular cropping there does not remain therein the proper and requisite nourishment to give flavour to such gross-feeding vegetables as Cabbage, Cauliflower, or Broccoli. These are much better in colour and flavour when grown in our average garden soils with a liberal addition of animal manure properly prepared and applied than without it—a well recognised fact.

"X. Y." says, "With Celery, Carrots, Onions, Beans, Cauliflowers, and Cabbages the same plan is adopted; the ground is well trenched, but no manure is added to the soil. Of course no one who desires to have clean and sweet Carrots would add strong doses of rank animal manure before sowing the seed. On the contrary, undoubtedly in this instance "X. Y." would be right in following up his adopted plan. Celery must be grown to a good size in order to obtain the much-coveted blanched large crisp heart. To secure this on most of our kitchen garden soils manure of some kind is necessary. The proper stimulant for this vegetable is well worked animal manure, applied to the trenches in a moderately dry condition, and to which a little soot and lime should be added. This will add to the size and crispness of the heart, and in nowise detract from the flavour. Size is not always gained at the expense of quality, as hinted at by "X. Y." As to Cauliflowers and Cabbages, the quicker they are grown the tenderer they are when cooked, and the finer are both colour and flavour. Cabbages when grown on poor soil take a long time to come to an eatable size, and are always strong and stringy.

R. H. G.

Tomatoes out-of-doors.—The past season has been unusually favourable for Tomatoes, being hot and dry, and the autumn has been exceptionally fine and bright; therefore the fruit had a long season to ripen in. I have seen many excellent crops this season both on sunny walls with a south aspect, and on borders with a good slope to the south. I find that the variety called Conqueror is one of the best for out-of-doors, producing as it does enormous quantities of fair sized fruits. In this district a good deal of the soil is full of stones, a condition which just suits the Tomato, as in very

rich soil it grows too luxuriantly to be so fruitful as in soil of a poorer character. I would advise anyone giving this Tomato a trial next season to sow in February in gentle heat, and have the plants a good size when turned out-of-doors about the first week in May; even then they must, however, have some slight protection at night, as very little frost injures them, but the earlier they are out the greater is the chance of their bearing a full crop. Keep the shoots thin and when a good lot of fruits are set and swelling, a mulching of manure may be put over the roots, and some liquid manure also applied if the weather is hot and dry. The Tomato revels in strong solar heat, and if moist at the root the tops are best kept dry.—J. G., Hants.

5268.—**German peat litter.**—"A. C., Isle of Man," enquires as to where this can be obtained. Allow me to refer him to the Eclipse Peat Moss Manufactory, Milford Station, Salisbury. It is used here in quantity by stable keepers, as it takes up less space than straw, being packed in bales of 2 cwt. or 3 cwt., each like compressed hay when prepared for exportation, and in towns economising space is a matter of importance. I have had it when cleared out of the stables, and can testify to its value as a fertiliser; it absorbs liquid manure better than straw. As regards heat-producing power, I can say from experience that it is very great, and for growing Mushrooms it would require great care to moderate it to a safe degree; but this could be done by mixing soil with it, when I have no doubt it would produce very good Mushrooms. I have no doubt that if "A. C." gets this litter for his stables and afterwards utilises it for Mushroom beds, he will have no cause to complain of the result. I may add that in order to grow Mushrooms well, a gentle, lasting heat in the bed of 75° is required; if it exceeds this, it will do more harm than if kept lower, as the more gentle the forcing the finer and firmer are the Mushrooms.—JAMES GROOM, Gosport.

NOTES FROM BELMONT, TAUNTON.

THE fine Anthurium Andreanum noticed in THE GARDEN two years ago is making here most satisfactory progress. It has a large number of well developed healthy leaves and several flowers upon it; one which I measured was 6½ inches long and nearly 8 inches across. The flowers stand out nobly amongst the foliage, the flower-stems having sufficient length and consistency to hold them well up above their associates. I did not measure the height of the plant, but I should say it is quite 4 feet high, independent of the pan in which it is growing. It is, of course, known that there are two varieties of this plant, one tufted, the other with longer stems, which keep constantly increasing and sending down aerial roots that quickly fix themselves in the soil. The plant in question is of the latter form. It is evidently not a deep-rooted subject, as it is growing in a pan about 8 inches deep and about 2 feet across.

The Dove Plant (*Peristeria elata*).—Of this the collection contains a fine plant, which has again flowered with great freedom. It has produced six flower-spikes, which have grown to a height of 4 feet. It will therefore be seen that the specimen here is a fine one, and it occupies a rather large pot. It receives a liberal supply of heat and moisture, which evidently suit it, for the bulbs are unusually large and as green and plump as it is possible for them to be. It is always given a rest in a cooler and dryer house than the stove when it has completed its growth, but water at the roots is not withheld so long as to cause the bulbs to shrivel.

Tigridias.—These are grown in the open borders rather largely, and I have no hesitation in saying that the success attained here surpasses anything I have before seen; they are planted in good sized clumps in spring, the soil being made thoroughly rich with well-rotted manure. Through the summer they are watered with manure water. Under this treatment they make plenty of healthy leaves and flower-stems more than 1 foot high, and bear a corresponding number of flowers, which

growth attached thereto. If cut as soon as they are properly open, they will last nearly or quite a week with a change of water. Sprays of *Libonia floribunda* are also pretty when used in a similar way, either by themselves or in association with a small blue *Salvia*; failing the latter, an early spike or two of the white Roman *Hyacinth* would be a good substitute. Though only lasting in beauty one day, the lovely colour of *Ipomœa Horsfalliae* will always recommend it. Two or three of its blossoms and a spray of Maiden-hair Fern arranged in a small glass or white china vase will be appreciated either in the boudoir or drawing-room. Another lovely flower of which stray specimens still open occasionally is the major variety of *Franciscea calycina*; this could be used in a similar way. Of white flowers for this season, *Jasminum gracillimum* is one of the best, and when better known it will be grown extensively for the purposes just named, as well as for bouquets and coat flowers. The seldom-seen *Urceolina aurea* is another useful subject at this time of year. Its singular pendent flowers are always attractive; a spike or two of them would associate well with the Paper-white *Narcissus* in a small vase. The thing to be regretted is that it is still so seldom met with in any quantity.

OF PLANTS, the following are suitable for indoor decoration at this season, especially in dark positions and likewise where large fires may be kept up or a considerable amount of gas consumed, viz., *Ficus elastica* and *Aspidistra lurida* and its variegated variety—three of the best. *Aralia Sieboldii*, with palmate foliage, is another useful indoor plant. The *Rhopalas* are likewise useful subjects that will stand a good deal of bad usage. *R. corcovadense* and *De Jonghei* are two of the best of them. *Cyperus alternifolius* from seed makes an excellent table plant; raised in this manner a greater quantity of small growth is obtained than in any other way. Amongst *Dracenas* the best of the coloured section is *D. terminalis*, and amongst green-leaved sorts *D. congesta* and *rubra*. For rather large vases *D. australis* and *indivisa* are the best. The *Lomatias* and *Grevillea robusta* furnish us with a class of Fern-like plants that are most useful in a small state. The *Grevillea*, being easily raised from seed, ought not to be overlooked. Of Ferns, *Asplenium bulbiferum* and *falcidum* are two of the hardiest. *Cyrtomium falcatum*, with fronds of a dark, glossy green, is an excellent Fern for keeping in a room the year round. *Davallia canariensis* is the best of its genus as an indoor plant. *Nipholobolus Lingua* is another Fern that will thrive long under adverse circumstances; so will *Pteris tremula*, which, in a half specimen size, is a handsome subject for a large basket or vase. *Nephrolepis pectinata* is likewise a good kind, not too robust or straggling in growth. *Platycerium alcinorne*, when well established, will be found to withstand a large amount of rough treatment, lasting long in good condition even where there is but little light. Of Palms, the hardiest, and therefore the most valuable during the next few months, are *Phoenix reclinata* and *tenuis*, *Chamærops humilis* and *Fortunei*, *Corypha australis*, *Latania borbonica*, and *Seaforthia elegans*, together with the invaluable varieties of the comparatively new kinds of *Kentia*. In order to ensure success and to enable the plants to withstand a considerable amount of adverse treatment, they should be well established before being brought forward for any kind of decorative work. Where the time can be spared, an occasional sponging of the foliage in the case of such as can be operated on without injury to the leaves will be found to be beneficial. Close attention must also be paid to watering; the happy medium should be hit upon, neither allowing them to become too dry nor too wet. Care should also be taken not to allow them to absorb stagnant water drained from them into the receptacle in which they have been placed.

INDOOR PLANTS.

IKORAS.—Where not already done, large plants of these should be sufficiently cut in and the weak shoots removed altogether, otherwise where treated

so as to induce free growth, they get unwieldy, with quantities of small branches that produce small heads of flower. This holds good with most of the varieties now in cultivation, as well as with the different species, including *I. coccinea*, the best of the whole family when so managed as to bring out its true character.

DIPLADENIAS.—Pot specimens of these that have had a short rest under dry treatment may now be freely cut back, shortening them in to a few eyes beyond where they were headed back to last season, turning them at once out of the pots, removing most of the old soil, and repotting in the best fibrous peat, to which a liberal amount of sand has been added. This treatment is advisable for plants that are wanted to bloom early in the spring, say to commence opening their flowers about the middle of May, and where a sufficient amount of heat can be kept up through the winter; otherwise it is better to defer the cutting back and repotting for several months yet. In all cases, plants so managed should have a thorough cleansing from insects.

CLERODENDRON BALFOURI.—This plant at one time was looked upon as a spring and summer bloomer, but when treated suitably, with a sufficient number to be brought on in succession, it may be had in flower during each month in the year, for growth that has been made under conditions to give enough solidity to the wood seldom fails to bloom when placed in a growing temperature after being fairly rested. Few things are more effective than its pure white bracts, but in their case, as with many other things, where required for cutting they must be grown in a manner that will impart to them a hardy character. In no way is this better attained than by training the shoots up the rafters of an ordinary stove. Examples that flowered in the spring and afterwards made growth early and had the soil allowed to become dry, so as to stop further extension and ripen up the foliage, will now have lost most of their leaves, and should have such portion of the extremities of the shoots as are at all soft cut away, so as to induce them to break back; all the side growths produced after being so treated will, where the plants have been properly matured, show flower by the time they have extended a foot or so. If very full of roots, the plants should have more room given them, not attempting to shake them out or disturb the roots, as this would most likely interfere with their blooming. In all cases, whether thus given more room or sustained by the help of manure water, which they will require after breaking into growth, the dry balls ought to be moistened by soaking for several hours in tepid water. It is not well to hurry them at this season; a night temperature of 60° to 65° with a proportionate rise in the day will cause them to move slowly for a time. Plants of this *Clerodendron* that bloomed late in the summer and have since made sufficient growth may at once be put to rest, withholding water until the foliage flags freely, after which give a little, but not nearly so much as to fully moisten the soil, which would have the effect of again starting them into growth where the warmth is enough to induce this; when they again flag from want of water apply a little more. This alternate flagging and partial revival of the leaves is the best method that we have found with this and a few other plants to mature the wood, so as to insure a full amount of flower subsequently, as if the leaves are allowed to die off suddenly through water being entirely withheld, the shoots are deficient in solidity to produce growth that will bloom freely. It is much more conducive to the well-being of this *Clerodendron* and its subsequent flowering to stop growth in the way recommended than to do so by submitting to a lower temperature, as if kept for any length of time much below 60° the plants are liable to perish unless they have been subjected to very cool treatment through the summer.

ANTHURIUMS.—*A. Scherzerianum* does much better when grown in an intermediate temperature than kept in the stove, making larger leaves with the flowers which follow proportionately

bigger. The plants will now be completing their growth, and until the leaves are fully matured the soil should be kept quite wet. It is a swamp plant, and will never grow so strong as it should unless the material in which the roots are placed is very much wetter than the generality of plants will bear; 48° or 50° in the night with a few degrees higher by day is the right temperature for *A. Scherzerianum* throughout the autumn and winter. The new *A. Andreanum* is now beginning to develop its true character; the first imported plants as they get stronger produce larger flowers, in this keeping on increasing proportionately. It will most likely be found to require a considerably higher temperature than *A. Scherzerianum*; it appears to go on flowering regularly as the leaves are produced and attain their full size. Plenty of moisture and loose open materials, such as are suitable for epiphytal Orchids, answer for it. Its habit in its native country is quite epiphytal, although in a pot it does not develop this character.

APHELANDRAS.—The flowering of that useful autumn kind, *A. cristata*, can be regulated by the way in which it is treated through the summer; where grown comparatively cool it will be in bloom up to the middle of November, at which season its erect spikes of bright orange-red flowers are very effective. In the case of old plants after the blooming is over the shoots should be headed back to within a joint or two of where they were cut in last year, placing them for the winter where they can be kept comparatively dry at the roots. The small growing *A. Roezli* is one of the freest winter flowering plants we possess, blooming when not more than a few inches high; by keeping a portion of the stock in an intermediate temperature they may be had in flower in succession up to spring.

BOUGAINVILLEAS.—When grown in a warm stove, treatment similar to that advised for the *Clerodendron* answers well for *B. glabra*, which is so manageable that, with the aid of two or three good-sized pot specimens, it may be had in flower for the greater portion of the year, ranging from April to the end of October. It likewise succeeds well when planted out in a low, intermediate heat, little above that of a greenhouse, flowering as a matter of course later in the summer, but when thus subjected to cool treatment it differs much from most other things in rarely blooming anything worth notice if the roots are confined to a pot, keeping on growing through the summer without much disposition to flower. *B. spectabilis* at one time was supposed to be a very difficult plant to flower, only succeeding in a high temperature, where, in addition, its roots could be almost baked with heat when at rest; yet it grows and blooms freely either planted out or accommodated with a large box or tub in a warm greenhouse or conservatory, usually coming in about May or June, and sometimes again in the autumn. Its intensely deep bright pinkish mauve bracts are finer coloured than those of *B. glabra*, but as this plant blooms from the ripe wood the knife must be little used, except after the spring flowering, when the shoots should be so far reduced as to keep it within the requisite bounds. It is a strong grower, covering a large space when it has plenty of roots and also head room. It should now be gradually dried off for the winter, giving very little water for a considerable time.

TUBEROUS-ROOTED SUMMER-FLOWERING STOVE PLANTS.—Such things as *Gloxinias*, *Achimenes*, herbaceous *Gesneras*, and *Gloriosas*, although bearing in many cases a lower temperature through the winter than might be supposed from the warm countries from which they originate, will not do to be kept too cool, as many to their cost yearly discover when it is too late, through the tubers going off in a damp, mouldy condition. In most cases, as we have before mentioned, the roots keep best in the pots in which they were grown, the soil having been allowed to get quite dry; yet pots with apparently nothing in them beyond the soil which they contain are not slightly objects in plant houses, and it often happens that there is no other place where they can

be kept at a suitable temperature. This being so, it is best to put them in paper bags with a good body of dry sand round them, the object of which is to keep the air to a great extent from them; otherwise, if the atmosphere is too dry, they not unusually shrivel up. In a temperature of 55°, or a few degrees above that, they are not likely to take any harm.

CALADIUMS should be similarly treated. The small *C. argyrites* is now by many grown in quantity for the use of the leaves to mix with cut flowers, as well as for general decoration in small pots. Where the stock of it happens to be limited, it will best be increased by now turning the plants out of the soil and repotting, keeping them growing instead of allowing them to remain in a dormant state through the winter. Moderate-sized tubers that have been in a state of semi-rest, if now placed in a brisk heat, will at once commence to grow, and as soon as the young crowns have got two or three leaves, and attained a height of 3 inches or 4 inches, they may be taken off from the parent tuber and placed singly in small pots, keeping them well up to the light.

MARKET FRUIT GARDENS.

THE principal work in these will for some time to come consist in grubbing up exhausted trees and in the planting of new ones. Gooseberries and Currants that have occupied the intermediate spaces between standard trees for a certain number of years should be grubbed up. When the trees begin to meet and intercept the light they are no longer useful; such thick cropping can only be successfully carried on by extra supplies, and as the tall standard trees are the most profitable it is a bad policy to let the under fruit stand so long as to check their growth. The work of clearing the ground is done in Kent in rather a summary manner by means of a horse and a chain, one end of which is slipped round the stem of the bush, which, with a sharp jerk, is drawn out with all its roots adhering to it. The ground is then well scarified with harrows, and sown down with permanent Grass seeds early in spring for feeding off with sheep. The bushes are drawn to an open space and burned, and their ashes are strewn on the surface. Orchards thus treated make rapid progress, for the upper roots take early possession of the freshly cultivated soil, and the trees generally become very fertile, as the surface soil is kept rich by top dressings. The Grass being allowed to get long at gathering time makes good winter keep for sheep. Apples are generally considered to keep better from trees grown on Grass than on cultivated ground, and in this locality anyone purchasing winter-keeping sorts always give the preference to those from trees on Grass.

PLUMS as bush trees are being largely planted in many places, for, next to Apples, they are about the best market fruits we have. Dwarfs or half standards are also very popular planted 15 feet apart each way, with two rows of Gooseberries or Currants between them. The ground about these is generally manured and roughly dug up very soon after the fall of the leaf, and the trees are pruned after Christmas, when all Couch Grass and weeds are forked out. The sorts in greatest request for market are the Early Orleans, Rivers' Early Prolific, Rivers' Grand Duke, Cox's Emperor, the Bush Plum, The Czar, Victoria, Pond's Seedling, Pershore, Belle de Septembre, and Black Diamond. Plums require pruning in the young stage to keep the strong leading shoots from rushing up too quickly, and thereby making weak, straggling trees, but after they get into bearing they require very little pruning beyond cutting away dead or weakly branches and shortening any straggling growths.

PEARS are being more planted as market fruits than formerly, and in soils where they succeed they are a remunerative crop. Tall standards treated like Apples on Grass are best, but dwarf bushes or pyramids produce the largest fruit. We have lately gathered very fine fruits from trees so managed of such sorts as Louise Bonne of Jersey,

Van Mons Léon Leclerc, Catillac, Josephine de Malines, Gratioli of Jersey, Beurré Clairgeau, Marie Louise, Marie Louise d'Uccle, Vicar of Winkfield, &c. These always command a remunerative price in the market, not only for dessert, but also for stewing. Bellissime d'Hiver, Verulam, and Catillac are best for culinary purposes, but second-rate dessert sorts like Vicar of Winkfield can be utilised for the purpose.

COB NUTS and FILBERTS are being largely planted just now; they flourish on stony land, such as that of the higher elevations where other fruits are precarious. They may be grown beneath tall standards, but are best when they get more sunlight. We observe lately that they are being planted in alternate rows with Damsons, as both succeed on light soil, and the Damson, planted as a standard and kept topped in rather closely, does not create much shade. The Nuts are planted about 15 feet apart as bushes, and pruned in the open cup fashion.

BUSH FRUITS, such as Gooseberries and Currants, are planted 6 feet apart each way generally as intermediate crops in young orchards, and lately Raspberries have been largely planted as field crops. They are planted in clumps 3 feet or 4 feet apart, and cut down annually to 3 feet high, not staked or tied as in gardens, but nevertheless in good soils and under liberal cultivation they yield fine crops that are all sold to jam manufacturers by the ton, as many as 4 or 5 tons being sent into Maidstone in one lot. The sorts most in demand are Fastolf, Carter's Prolific, and Prince of Wales; only red sorts suit the market.

WORK DONE IN WEEK ENDING NOV. 4, 1884. OCTOBER 29.

THE sharp frost of yesterday morning—5°—and the strong gale of last night having brought down the leaves very rapidly and drifted them together, advantage was taken of the dead calm that followed to rake them in heaps for carting. Being so dry, they will be invaluable for stacking, to be used for the renewal of the heat in Pine pits early in the new year. All the best will be reserved for that purpose, and the remainder will be used for making up hotbeds for forcing various things, and for strewing over and between to protect the roots from frost of pot Roses, forcing shrubs, and late Strawberries, that are left out of doors till needed for the forcing pit. Cleaning up generally, and well-watered small shrubs used in the winter bedding. Euonymuses, Portugal Laurels, Aucubas, and others of that nature have flagged very much, and rain in quantity will not come; we therefore thought it best not to wait for it. In and about the houses the principal work has again been the potting and planting out in frames of plants used for summer bedding, not that all old plants are saved, but only such as do not increase readily, or those that the young stock is insufficient for next year's needs, and the old ones are therefore needed for the production of cuttings for spring striking, or for use as vase and central plants they are required to be large. In potting old plants of Pelargoniums, they are, what may be described, as partially pruned, that is, irregular and long growths are cut off, and the plants made to look compact and even, and if any that are so treated be rare, or we are short of stock, cuttings are obtained, are inserted, and placed in a warm house, where they strike just as freely as they did out of doors two months ago, or as they do in heat in spring. A dry atmospheric heat and rather dry at root, together with firm planting of the cuttings round the sides of the pot, never fail to result in a good strike.

OCTOBER 30.

More leaf raking, and Oaks being still quite green we are not likely to have done with it for a long time to come, but this work we never begrudge, as we get more than full value for whatever labour we spend. Began some alterations which necessitated the transplanting of Rhododendrons, and really the ground is as dry as it was in August, and not being prepared for drenching the plants before and after removal, which is the

only alternative, we purpose deferring all other transplanting till a change in the weather arrives, which we hope will be very soon. House work has been more potting of bedding plants. The large plants of Heliotropes, Marguerites, and Abutilons are potted with a view to doing service for use as conservatory plants and for cut flowers during the winter and early spring, and therefore more pains are taken with them, both as regards potting, compost, and housing, than with old plants to be used for bedding next year. They are put in the warmest houses and kept syringed till new growth has fairly started, and pruning is also deferred till then, for the reason that some of the branches, or portions of them, flag so much that they do not recover, and have therefore to be cut off to the points at which new growth begins as soon as this growth is about an inch long. Bedding tuberous Begonias are being packed closely together in boxes of light soil, and will be wintered in a dry shed, and when necessary will be covered thickly with mats to keep them free from frost. Fuchsias are also being roughly planted on the floor of a shed, as house space, for the present at any rate, is out of the question. They winter very well in this manner, a good watering being given them as soon as planted, and about one other good watering a month or six weeks hence will serve them all the winter through. Whoever before heard tell of having to shade Chrysanthemums from sunshine in England? and yet we actually had recourse to shading to-day; the flowers having opened so rapidly, and being required for a special purpose, we wished to keep them as late as possible. I may add that the sun was powerful enough to cause the plants to flag just as much as they do in summer under bright sunshine, and the watering required is great by comparison with other years.

OCTOBER 31.

Another splendid day; warm and sunny as in midsummer. All outside hands in kitchen garden finished earthing up Celery, weeded the rows of winter Spinach, and hoed between the rows; also weeded winter Onions, Lettuces, and Endive, and the borders of Violets and Strawberries. Earthed up remainder of winter greens and hoed between the rows of young Cabbages and Coleworts. Owing to the mild weather the former are getting too forward, and will be likely to run to seed, and plants from a later sowing will take the place of any that manifest such a tendency. Pulled up French Beans and roughly cleared the border of weeds, &c., till such times as manure can be wheeled on for the ground to be trenched. We are still gathering a few Peas (Ne Plus Ultra), and they would be very good if the birds would but let them alone, or at any rate be content with a reasonable amount of the produce, or, better still, take their flight to the gardens of those who do not believe in either robbing a bird's nest or shooting even a single delinquent; such people would then soon change their opinion as to tomtits, sparrows, thrushes, and black-birds. The dry weather has doubtless made them more ravenous and caused them to defy our usual mode of protection, namely, by netting over, which we always have to do in autumn as soon as the grain has been gathered in from the fields. Pulled up the haulm and sticks of earlier sown Peas and cleared the ground as named for French Beans, and this, in common with all the ground that has yet to be cleared, will, as opportunity offers, be trenched, for, with the exception of sowing a few Peas and Broad Beans a fortnight hence, cropping is over for this year. The ground for the early Peas is now being prepared, the position being a southern border that has already produced two crops, namely, early Potatoes and Lettuce; this last is just now finished, and deep digging and a light dressing of manure is now being given. Potted Tomatoes into 8-inch pots, and placed them on the soil of the old Melon beds, the late lot of which is just over. They will be allowed to root through the bottom of the pots into the soil, and the warmth from the one 4-inch pipe that there is for bottom heat will help them greatly, and yet

the cramping the roots get by being in pots will check all tendency to undue luxuriance that would otherwise result at the cost of proportionate shyness of fruiting. They will be trained to the trellis with one principal stem only, and as soon as the fruit is set on the laterals they will be kept closely pinched. Picking off the bad leaves of Pelargoniums and other bedding plants that have started into new growth, and arranging them as neatly and thinly as space will allow. Potted clumps of Valley Lily and placed them in a cold frame with Spiræas and other plants intended for forcing. Filled all the frames we have to spare with Strawberry plants for forcing, but of course the lights will be kept entirely off except in frosty or very wet weather. The remainder will be arranged close together with leaves between to prevent the frost breaking the pots, and shutters covered with asphalt; canvas will be placed over them in wet or showery weather.

NOVEMBER 1.

The general overhaul in the matter of neatness customary on Saturday, though now less as regards flower garden labours, is increased in other directions, walks and lawn requiring all our strength to keep in anything like presentable condition, and just now we do not attempt, if we may so put it, "full dress;" that stage must be left till the litter from falling leaves is over and worm casts are ended through the worms seeking warmer quarters at a greater depth in the ground. We therefore to-day only cleared up the walks and parts of ground that are most frequented and roads in the immediate vicinity of the mansion. All the houses had their usual brush up, Grapes looked over to cut out bad berries, and in the late houses the leaves that seemed ready to fall were taken off, as in that state they rather engender damp, and a dry atmosphere is now a necessity of good keeping. Peaches were given a shake to bring down the matured foliage, Cucumbers tied and pinched, Pines watered, and fungus and weeds pulled out of the plunging beds. The remainder of Poinsettias were put into stronger heat. Ferns that had stood in frames for the summer were put in the Strawberry house, together with winter-flowering Pelargoniums, and here they will remain till the end of the year, when the house will be required for Strawberry forcing, the plants meanwhile being started in frames

filled with Oak leaves, on which the pots are stood, to gently excite the roots in advance of the crowns.

NOVEMBER 3.

The rain that fell last night and early this morning (over half an inch) was as welcome as any rain that ever fell in August, for many plants seemed to be suffering just as much as they do at that season. Our first job was to roll all walks, as in places the ground was getting loose and rough. Finished transplanting the Rho-

from the open borders and potted plants of *Schizostylis coccinea*; though in full flower, they lifted with good balls, so that they will hardly feel the moving. For the present they occupy a heated pit, which will be kept rather close till the plants get established; then they will be useful for furnishing vases in the coolest part of the mansion and prevent the loss of more valuable plants, which for the most part are ruined by being required to do duty in halls and corridors that are suitable for anything except plant culture. The hardier Palms are the best of all plants for such positions, but then the cry is, "We want flowers," and in obedience to that demand, the present sacrifice is that of *Chrysanthemums*, reason having no voice in the matter when fashion is concerned.

NOVEMBER 4.

At last the frost has come sufficiently sharp to cut down Dahlias, 7° last evening, which has been quickly followed by slight rain and a temperature 20° warmer. Grubbed up old Rhododendrons and trenched ground for planting other shrubs. Vegetable or leaf mould is the only manure we use for shrubs, and this we place immediately under the top spit, so that in making the holes for the plants it gets well mixed with the soil, and the roots get the benefit of it at once. Tying early Peach trees to trellis, and began to prune the second house. Washing plants, as yesterday. Cut all green Tomatoes, and hung them up in vineries to ripen. Gathered the last French Beans from the open air; the frost of last night has cut off supplies of both these, Runner Beans, and the few Peas we had left. Autumn Giant Cauliflower is now plentiful, and the heads are protected and retarded by half lifting to cause them

HANTS.

VIEW IN YELLOWSTONE PARK.

THIS illustration shows one of the many strange and beautiful scenes in this great park, which the American nation has wisely resolved to devote to national purposes and to the preservation of the national flora and fauna of the district. It is full of weird scenes and wonderful phenomena, or evidence of phenomena, while its water and woods are of a type of beauty



View of waterfalls in Yellowstone Park.

dodendrons that a few days ago we were obliged to desist from, owing to the dry state of the gravel, and even now it is nothing to boast of, and further planting must be postponed till the ground is wetter. Pricked out Cauliflower and Lettuce plants at the foot of south walls, where they can be easily protected should occasion require. Trenching has been our other kitchen garden work. Work in the houses has been sponging Gardenias and Eucharis. Fly and soft scale are the insects that bother us, mealy bug having long since been exterminated, thanks to the paraffin oil cure. Lifted

to flag; then the leaves are bent over the flowers.

which all can appreciate. The idea is excellent, and well worth the attention of other countries. The poorest in Europe have large stretches of picturesque and often useless land, which, enclosed and planted, might serve well the purpose of a great national forest and a refuge for the original fauna of the country and even flora, so far as it is desirable to preserve it. How many districts there are, for example, in our own small islands not worth sixpence an acre which could be made of delightful interest and not wholly without value to the country!

TREES AND SHRUBS.

SILVER FIR DISEASE.

(*PICEA PECTINATA*.)

BOTANISTS, and especially British and Continental "professors," have of late years involved the subject of some parasitic fungi in inextricable confusion, and the fungus which causes the disease of Silver Fir is one of their victims. We will endeavour in as simple a manner as possible to explain how the case stands with the Silver Fir fungus without using too many of the uncouth and ill-formed Greek and dog-Latin terms with which the imperfectly educated "professors" delight to embellish their supernaturally learned lucubrations.

First, as to the name. The best known name of the fungus is *Peridermium columnare*; for a change we sometimes see the name given as *Æcidium columnare*, or *Æcidium*. Of late these names have not been deep enough, so the Continental "professors" now know the fungus under the delightful cognomen of *Melampsora Goeppertiana*. They also term it a *Melampsoropsis*. If we turn to a paper written by our friend Mr. C. B. Plowright, a paper whose aim is to make these dark subjects clear, we find under *Peridermium columnare* the strange addition of "not British." One might well come to a sudden "pull up" on reading so startling an announcement; but on writing to our friend for an explanation, he laconically informs us that the words "not British" were inserted in mistake. The unfortunate mistake adds considerably to the already existing confusion.

Now, it is probable that every reader of THE GARDEN knows that a certain number of agriculturists and botanists say that Corn mildew is only one form of the blight of Barberry bushes; that Barberry bushes, in fact, blight Corn. For our part, we believe the case unproven. The believers in the Barberry bush business also inform us that the disease of Silver Fir is caused by a blight of the Cowberry or red Whortleberry (*Vaccinium Vitis-idaea*). But in the same way as no Barberry bush whatever is native of Australia or India, where Corn mildew is extremely common, so the fungus or blight of *Vaccinium*, although searched for in the most persevering manner, has never yet been found in Britain.

There are three other species of *Peridermium* which invade the Coniferae. We will refer to two, *P. corticolum* and *P. acicolum*; one grows on the branches and the other on the leaves of the Scotch Fir. These two fungi are very different from each other, and the spores or seeds of the latter are nearly or quite twice the size of those of the former. The Barberry bush "professors" tell us that these two fungi are only one condition of an orange fungus extremely common on Groundsel, and called *Coleosporium senecionis*. The learned teachers must of course use fantastic words, so they term the fungus a *Eucoleosporium*. It will be seen that a difficulty crops up here, for how can one blight of Groundsel cause the production of two different fungi on Firs, one with spores twice the size of the other? "Oh," say the professors, "the size of the spores is of no importance; the fungi you call by two names we will call by one; they are both the same with each other." But we reply "there are two *Æcidium* blights on Barberries; one with large spores, and the other with small spores, precisely the same as in the *Peridermia* of the Coniferae, and you accept these

as two species." "Ah," say the professors, "the size of the spores is of the highest importance; therefore one must be named *Æcidium berberidis*, and the other shall be permanently known as *Æcidium magelhanicum*." In some examples of true *Æcidium berberidis* the spores are nearly twice the size of those in other examples, but this fact is considered by the professors to be of no moment. It must be called, they say, a *Heteroeupuccinia* (*sic*). In the very latest publication relating to this unhappy subject, Mr. C. B. Plowright has published what is supposed to be a complete list of the fungi of Norfolk. We have turned to the list to see if the Firs of Norfolk are invaded by *Peridermium*, and we find the genus is not even mentioned. When we turn to the contemptible fungus of Groundsel (the supposititious second condition of the fungi of our Firs) we find that paltry fungus honoured with a position under the name of *Coleosporium senecionis*, whilst, the much more important parasites of Firs are nowhere. It will be seen from these remarks that unless practical arboriculturists and agriculturists are acquainted with every one of the deep ramifications and intricacies of the new little school of sensational botanists, it is quite useless for practical men to consult any of the "professors' works. But even if one can find his way through the mazes, he will still remain uncertain as to whether many fungi, as, for instance, the Fir fungi, exist or do not exist in Britain. If none of the wonderful botanists just mentioned, or, as they love to term themselves, "mycologists," is asked why no Fir fungus is published in the list, he will reply, "Because it is a metecious *Coleosporium*;" or if he be still more learned he will say, "Because it is one of the heterocismal *Uredines*, or a heterocismal *Melampsora*."

From what we have said on this subject it will be seen that the "professors" are not only constantly inventing new, uncouth, ill-formed, and unnecessary terms, but they are constantly twisting and manipulating facts to suit theory. When the size of spores suits their theory, they say size is of the utmost importance; when it does not suit, they at once say size is of no importance whatever. They blow hot and cold with the same breath. We do not say it is impossible that one form of two destructive diseases of our Conifers does not grow on Groundsel, or that the disease of Silver Fir cannot exist as a blight on Cowberry, but we unhesitatingly say that no such connection has ever been proved.

Since this account was written Mr. Scott Wilson, a son of one of our contributors, has sent us *Geraniums* from Cambridge infested with fungi, and requesting a name. The correct name of the fungus is *Uromyces Geranii*; sometimes it is called *Uredo*, or for a change *Trichobasis*. We turned to friend Plowright's essay to see if any new ideas obtained as to this fungus, and found that it was omitted. It had vanished—it was not there. Turning to another work written by a great "professor," we found that the latter grandee had called the fungus an *Auteuromyces*, belonging to a section of the *Euromyces*. We then turned to friend Plowright again, and soon found these sections, but altered to *Auteuromyces* and *Euromyces*; still no *Geranium* fungus was to be found. We then wrote to our friend for an explanation, and he replied that he had forgotten to put it in. The names we have given above are samples of the superlative tip-top botany of the "younger school of botanists," of the "professional professors," and the anonymous newspaper critics.

WORTHINGTON G. SMITH.

What to plant.—In my previous note I perhaps laid myself open to the charge of advising something to be planted, which is not hardy everywhere. I mean *Athrotaxis selaginoides*. Your correspondents would do excellent service in recording their experiences thereon. There was nothing more admired at the Forestry Exhibition in the nurserymen's collections than this well-named *Athrotaxis*. Close to the sea nothing will succeed better than *Cupressus macrocarpa* and *Lambertiana*, the former being more pyra-

midal in growth than the latter. Mr. Baines in his remarks takes notice of the contrast which *Picea Morinda* and *nobilis* and *Pinus insignis* make with the surrounding foliage. And one of the prettiest things in Nature is the appearance of the Hemlock Spruce when the old branches put forth their fresh green tips.—C. A. M. CARMICHAEL.

THE TEMPLE CHRYSANTHEMUMS.

VISITORS to London interested in Chrysanthemums should spare a few moments to look in at the two fine collections in the gardens of both the Inner and Middle Temple. Both are uncommonly fine this season, and both ought to be seen, inasmuch as they differ somewhat. For example, the Middle Temple display very largely consists of the earlier sorts, especially of the Japanese race; while that in the Inner Temple is composed largely of incurved varieties, which are now in perfection. These collections will compare favourably with any grown in pure country air, and they show admirably how amenable the Chrysanthemum is to culture in a smoke-laden atmosphere. Both collections contain good selections of the old and well-known sorts, together with a good intermixture of novelties, among others being the following, which attract attention: *Agréments de la Nature*, long twisted petals, golden yellow, shaded brown; *Bacchus*, crimson centre; *Bendigo*, light canary, of exquisite shape; *Boule d'Or*, yellowish bronze; *Bras Rouge*, crimson and yellow; *Cité des Fleurs*, velvety amaranth, with twisted petals; *Comet*, centre bronzy reddish rose passing to golden yellow; *Duchesse de Gerolstein*, rose with silvery shade; *Etoile Toulousaine*, red, drooping florets; *Flamme de Punch*, orange-red streaked with golden yellow, fine large flower with twisted florets; *George Gordon*, crimson, very fine; *Ile Japonnaise*, rosy violet, golden reverse; *Joseph Mahood*, ground colour yellow, striped with reddish hue; *Le Rio*, vermilion-red; *Lord Alcester*, a very fine primrose sport from *Empress of India*; *Lord Wolseley*, purplish crimson, incurved, very large; *L'Or du Rhin*, very bright gamboge-yellow, large flower with twisted florets; *Mdme. Deville*, white, striated with pale rosy violet, large flower with broad florets; *Margot*, centre white, faintly tinged with rose, outer rays rosy lilac, very large flower with broad florets; *Marguerite Marrouch*, crimson, edged yellow, a fine exhibition flower; *M. Elie*, bright amaranth; *Mons. Astorg*, fine white flower with broad florets, occasionally tinged with pale rose; *Mons. Deville*, deep vermilion-red, shaded with crimson, centre gold and yellow, large flower with broad florets; *Mons. Planchenau*, silvery mauve, large; *Mrs. Todman*, rosy mauve, incurved notched florets, reverse silvery, splendid globose flower, very distinct and attractive; *Perle des Blanches*, a fine white; *roseum superbum*, beautiful satiny rose, centre suffused with pale sulphur-yellow, changing to white; *Salteri*, deep red, passing to scarlet, and shaded with carmine; *Single White*, outer rays broad and spreading, pure white.

NATIONAL CHRYSANTHEMUM SOCIETY.

WE are anxious to increase as far as possible the number of members of this Society, in order that the success and usefulness hitherto attending its operations under the title of the Boro' of Hackney, may not only be maintained, but sufficiently enhanced to justify the new departure of having adopted the title of National, an alteration that has long since been considered desirable from the facts, among others, that the exhibitions are now, and have been for years past, held in the metropolis, and that so large a share of support from cultivators of the Chrysanthemum has been accorded to this Society. This can only be accomplished by an accession from time to time of new members, and although we have ever received a most generous support, yet now that it is proposed to increase the sphere of operations to the fullest possible extent, by way of encouraging the cultivation of the Chrysanthemum even more than has yet been accomplished, and at the same time to develop the grand competitions in fruit

and vegetables as far as practicable, we trust we may receive a more general support from exhibitors and others residing at a distance from London than we have hitherto had. Our anxiety has ever been to make the schedule as comprehensive as possible, so that exhibitors of all classes may have the opportunity of competing, but it has not been by any means so complete as we could wish. We, however, earnestly hope that, with increased support, we may be enabled to include some of the many subjects that are worthy to be more fully provided for in the schedule, and, with this object in view, suggestions from any friends of the Society are specially invited. An annual subscription of not less than 5s. entitles to all privileges, both as exhibitor and member.

WILLIAM HOLMES, Hon. Sec.

Frampton Park Nurseries, Hackney.

The Chrysanthemum.—Under this title Mr. Burbidge has introduced his admirable and timely book upon the most favoured of our early winter flowers, and I can very heartily commend it to all who may feel interested in the cultivation of the class of plants which give the book its name. It gives us the history of the plant, and a record of its cultivation both outdoors and indoors. Being one of our popular show plants, all relating to exhibiting is very fully treated of, and even non-exhibitors may read all Mr. Burbidge's very practical details with advantage. Probably the shows will stimulate a great demand for the book, and if something results in the way of lifting them out of their present rather parochial surroundings much good may result.—D.

NOTES OF THE WEEK.

Mr. Anderson-Henry's plants.—We learn that the rich collection of hardy plants formed by the late Mr. I. Anderson-Henry, at Hay Lodge, Edinburgh, will shortly be disposed of by auction. It is to be hoped that they, particularly the rarities, will pass into good hands. Mr. Anderson-Henry has left his rich botanical library to the public of Dundee.

Apple Congress Report.—We are requested to state that the report on the Apple Congress, which was held at Chiswick in 1883, is now ready, and that nurserymen and seedsmen who desire to purchase it in large quantities can have it on special terms on application to Mr. J. D. Dick, at the offices of the Royal Horticultural Society, South Kensington.

National Rose Society.—We have received this society's revised edition of the catalogue of exhibition Roses, which is supplemented by a catalogue of garden Roses. The list, which is alphabetically arranged, comprises the raiser's name of each sort and the date at which it was put in commerce. The form and colour of the flower are also given, and likewise the habit of growth, the whole forming a useful guide to the rosarian, be he an exhibitor or not.

Subscriptions to Gardeners' Benevolent Institution Augmentation Fund.—The following sums as a first instalment have been collected by Mr. Coleman, Eastnor Castle, Ledbury, in two days without meeting with a single refusal. Two of the undermentioned have become annual subscribers and one a life member:—

	£	s.	d.
Mr. W. Coleman	1	1	0
Mr. P. Anderson, London	2	2	0
Dr. Henry, Haffield	2	0	0
Mrs. Ricardo, Bromesborough	1	0	0
Rev. R. P. Hill, Bromesborough	0	10	6
Mr. Macrobie, gardener, Bromesborough	0	10	0
Mr. Henderson, gardener, Haffield	0	10	0
Mr. G. Piper, Ledbury	0	10	6
Mr. E. Webb, Ledbury	0	10	6
Mr. J. Dawes, gardener, Priory, Reigate	0	10	6
Mr. Fisher, gardener, Flixton Hall, Bungay	0	5	0
Mr. Parr, Ledbury	0	5	0
Mr. Fraser, Upper Hall Gardens, Ledbury	0	10	6
Mr. W. A. H. Martin, Upper Hall	2	0	0
Mr. C. Stevens, Ledbury	0	5	0
Mr. J. Hopton, Canon, Frome	2	0	0
Captain Archdale, Ledbury	1	0	0
Mr. H. Bailie, Eastnor	0	10	0
Mr. C. Radcliffe Cooke	0	10	0
Mr. P. E. Wheatley, West Bank, Ledbury	0	10	0
Total	17	0	6

Let us hope that Mr. Coleman's excellent example may be the means of awakening an interest in the institution in other quarters.

ACREAGE UNDER GARDEN CROPS.

ORCHARDS in Great Britain, according to parliamentary returns just published, again show an enlarged area, covering 191,648 acres, as compared with 190,710 acres in the previous year. In the county of Somerset, and in one or two others in less degree, the apparent increased acreage is partly attributable to more complete returns. The exclusion of land planted with fruit trees, but returned under another classification, is doubtless an occasional cause of fluctuation in the returns, and one which not unfrequently can only be discovered by personal communications with the occupier.

The acreage under market gardens shows a decrease in the total of 94 acres, but this is due chiefly to the fact that upon inquiry it was found that a large quantity of land in Essex which was occupied last year by Peas and Potatoes, and which in any following years might be under Wheat or other crops, was erroneously returned in 1883 as market gardens, instead of being enumerated under the proper classification in the returns. The collectors report indeed, generally, in reference to both orchards and market gardens a considerable extension, and that in some localities every available plot of land is being devoted to the purpose, in order to meet the continued demand for fruit and fresh vegetables for large towns. Were it not for the apparent diminution here alluded to, the returns would have shown an increase in the area under market gardens of 3500 acres. Occasionally, indeed, portions of land appear to have been sub-divided specially for these purposes.

ACREAGE under orchards, market gardens, and nursery grounds, as returned upon June 4, 1884; and of woods, as returned in 1881, in each county in England, Wales, and Scotland.

COUNTIES.	Orchard &c.	Market Gardens	Nurseries	Woods
ENGLAND.	Acres.	Acres.	Acres.	Acres.
Bedford	596	962	14	11,829
Berks	2,055	446	149	29,120
Buckingham	2,120	392	141	27,373
Cambridge	2,043	910	135	5,321
Chester	2,030	1,285	589	20,132
Cornwall	5,006	1,244	47	28,957
Cumberland	311	258	204	26,771
Derby	863	407	380	24,624
Devon	26,348	986	340	77,459
Dorset	4,111	116	87	35,250
Durham	245	716	44	25,190
Essex	1,355	2,517	423	27,934
Gloucester	15,377	1,537	263	52,892
Hants	1,592	1,197	180	105,489
Hereford	27,105	53	208	37,632
Hertford	1,281	526	458	22,782
Huntingdon	458	212	81	3,964
Kent	17,494	8,071	694	82,849
Lancaster	2,440	1,202	322	37,755
Leicester	801	423	138	11,252
Lincoln	1,853	749	231	39,431
Middlesex	3,604	7,582	515	2,382
Monmouth	3,977	325	19	29,856
Norfolk	2,006	1,010	162	50,538
Northampton	752	447	162	24,289
Northumberland	502	653	83	39,977
Notts	1,872	721	153	26,387
Oxford	1,461	226	54	21,661
Rutland	64	36	2	3,156
Salop	3,859	55	95	45,641
Somerset	23,772	672	176	39,850
Stafford	1,118	777	266	34,911
Suffolk	1,598	306	123	32,485
Surrey	1,989	2,854	1,380	42,974
Sussex	2,175	1,256	456	113,043
Warwick	1,450	506	190	16,659
Westmoreland	294	14	22	14,752
Wilts	3,128	233	110	45,270
Worcester	17,636	2,531	372	18,871
York, East Riding	812	465	206	14,480
" North Riding	979	283	154	49,106
" West Riding	1,525	2,499	694	66,014
TOTAL FOR ENGLAND	189,757	47,900	10,522	1,466,038

WALES.				
Anglesey	7	2	..	1,769
Brecon	1,097	5	27	10,414
Cardigan	50	7	23	14,738
Carmarthen	135	10	51	21,516
Carnarvon	66	32	24	10,938
Denbigh	257	230	30	16,705
Flint	155	23	10	7,579

COUNTIES.	Orchard &c.	Market Gardens	Nurseries	Woods
Acres.	Acres.	Acres.	Acres.	
Glamorgan	281	416	53	23,687
Merioneth	23	8	17	15,049
Montgomery	507	..	17	22,744
Pembroke	57	16	9	10,064
Radnor	571	..	4	7,583
TOTAL FOR WALES	3,236	749	265	162,786

SCOTLAND.				
Aberdeen	21	477	158	103,156
Argyll	9	28	9	42,741
Ayr	82	140	102	22,177
Banff	7	7	24	28,188
Berwick	33	30	22	13,376
Bute	2	101	22	3,454
Caithness .. .. .	..	4	..	210
Clackmannan	15	13	3	2,028
Dumbarston	7	54	14	7,926
Dumfries	55	62	200	31,162
Edinburgh	103	888	410	11,354
Elgin, or Moray	15	9	116	50,130
Fife	35	89	42	19,471
Forfar	22	315	95	30,227
Haddington	110	529	5	10,474
Inverness	30	6	56	162,201
Kincardine .. .. .	..	58	..	27,880
Kinross	1	1	..	2,576
Kirkcubright	45	5	24	19,741
Lanark	544	671	36	18,780
Linlithgow	6	16	10	4,599
Nairn	12	2	3	13,241
Orkney .. .. .	..	..	..	..
Peebles .. .. .	..	2	6	10,177
Perth	436	585	103	94,563
Renfrew	37	139	67	5,424
Ross and Cromarty	20	6	8	43,201
Roxburgh	47	47	53	14,679
Selkirk	1	6	1	3,223
Shetland .. .. .	..	..	..	..
Stirling	27	27	53	12,483
Sutherland	2	..	..	12,260
Wigton	6	9	73	8,009
TOTAL FOR SCOTLAND	1,730	4,326	1,715	829,476

GREAT BRITAIN—(TOTAL)	194,723	52,975	12,502	2,458,300
Isle of Man	84	148	3	..
Jersey	1,559	200	43	..
Guernsey, &c.	341	119	24	..

Sefton Park, Liverpool (Regular Reader).—This was laid out by M. André within the last twenty years or so.

Japanese Chrysanthemum Source d'Or.—Among the many varieties of Japanese Chrysanthemums recently brought out, I find this to be one of the best. The flowers, which are recurved and freely produced, are of a clear, brilliant orange, slightly tinged with red and tipped with light yellow. Habit and foliage all that can be desired. Being an early bloomer, it forms a fine companion to Elaine for decorative purposes.—E. A. L.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

Names of fruits.—I. J. R.—Muscat of Alexandria. —D. Waller.—2, Minchal Crab; 3, Beauty of Kent; 1 and 4 not recognised. —J. K.—1, probably Beauty of Kent; 2, Oslin; 3, Queen Caroline; 4, not known. —H. M. Grove.—1, not known; 2, Blenheim Orange; 3, Bedfordshire Foundling; 4, too much decayed. —E. B. W.—2, Fearn's Pippin; 3, Bess Pool; 4, Flower of Kent. —A. Bona.—American Mother. —Major-General Moody.—1, Burcharth's Reinette; 2, New Hawthornden; 3, not known. —L. Arden.—Probably Crimson Caraway Russet. —R. B.—Apparently King of the Pippins.—Others next week.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—J. C. O.—1, Tea; 2, Gnaphalium lanatum; 3, Pleione lagendaria; 4, Maxillaria picta. —W. G.—1, Epidendrum fragrans; 2 and 3, Oncidium Forbesi vars.; 4, O. varicosum. —E. M. G.—1, Eonymus flumbriatus; 2, Juniperus virginiana var. Bedfordiana; 3, probably some herbaceous Leguminosae, impossible to name from such wretched specimens. —Nicol (Aberdeen).—Quercus coccinea.—F. J. R.—2 and 3, varieties of common shrubby Calceolaria; 4, species of Iberis.

BOOKS RECEIVED.

"A Book about Roses," by Canon Hole; 5th edition. Blackwood & Sons.
 "The Australian in America," by J. L. Dow, M.P. Melbourne Age Office.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

NOTES FROM NEWRY.

Autumn flowers.—It is a most unusual occurrence indeed here in this humid valley to have Dahlias, *Salvia patens*, *Calceolaria amplexicaulis*, and similar plants in full flower on the 10th of November, but such is the case. These things are flowering far beyond their usual season, and others again are blooming quite out of season. *Primula japonica*, for instance, is in full bloom, and not in solitary cases, but in numbers. I am afraid that if cold weather does not come soon spring flowers will be excited into growth and bloom at the expense of the spring display. Snowdrops are well above ground, especially in positions near trees, and where they had a thoroughly good baking during the summer, and consequent rest. Now the copious autumn rains have come they are at once excited into active growth, and, from present appearances, will bloom long before spring is here. *Tritoma grandis* is undoubtedly one of the finest and most attractive of late autumn-blooming plants. Here it is in full flower and has been so for quite a month—huge clumps of it with twenty heads or so growing near water. Others associated with Pampas Grass, and others again planted amongst evergreen shrubs, have a very fine effect. All who are at all interested in maintaining the brightness of the flower garden till as late a date as possible should make a note of this.

With the value of *Tropæolum tuberosum* for garden decoration I was never fully impressed until the other day, when, looking through an old garden, I saw it in quantity; it formed broad panels on walls fully 12 feet high, and was profusely flowered from top to bottom—the flowers scattered freely all over, and hanging besides in huge sheets of twenty or thirty blooms each. How seldom do we see any attempt made to produce effects of a pleasing character on garden walls. The stereotyped plan is to plant fruit trees against them at regular distances apart, and to wait for any returns that in the ordinary course may accrue. In the garden just alluded to the fruit trees were planted wide apart, and the spaces between filled in with panels of *Tropæolum tuberosum*, and various Clematises, and the better sorts of wall Roses. The fruit trees were fruitful and vigorous—altogether a very happy blending of the useful with the beautiful.

Escallonia leucantha deserves a word of commendation as a distinct and useful early and late-flowering wall shrub. It is of very free growth, and equally free as regards bloom. At the present time it is profusely laden with small spikes of white flowers, which contrast nicely with the deep green, glossy foliage. *Billardiera longiflora*, the autumn Blueberry, as I think I have heard it called, planted here against an ornamental glass-coped fruit wall is quite hardy and most vigorous; so much so, that fully 4 feet of its top, which had twined up into a Peach tree, had to be cut off. It is pretty in spring when profusely laden with its green-tinted white bells, and is the most distinct thing upon the wall from

July to the present time, heavily laden as it is with its large sized turquoise-blue berries. *Doronicum draytonense* has woke up in earnest since the moist weather set in, and is now in full growth and bearing finer flowers than it did in the spring, some of which are nearly 4 inches across.

Gynerium jubatum, in my opinion, is by far the finest of all the kinds of Pampas Grass. Vigorous clumps bearing from twenty to thirty distinct club-shaped panicles of silvery inflorescence, all standing quite erect and about 9 feet high, have a striking appearance associated with *Rhododendrons*, *Tritomas*, &c., near the margins of ornamental water. Our climate we consider to be a favourable one for the full development of many plants, and no doubt it is; but how far short it falls of that of the south of England is fully shown in the case of *Vitis humulifolia*. Here, placed in the warmest position we can give it, it is only just going out of flower, whereas Mr. Ewbank wrote some weeks since that the berries on his plant were fully blue. T. S.

Ipomæa rubro-cœrulea.—This is a handsome and useful Bindweed for the intermediate house or warm conservatory—handsome, inasmuch as it bears all along its far-reaching shoots little bunches of large pale blue flowers, which remain expanded all day; and useful because it flowers in mid-winter, continuing in beauty for several weeks when properly treated. The cultivated species and varieties of Bindweeds number some hundreds, counting the now numerous forms of *I. hispida*, or Morning Glory. A good many of these are somewhat too weedy to be classed among plants of real value. In *I. Horsfalliæ*, *I. Thompsoniæ*, and two or three other strong growers we have first-rate plants for draping pillars, rafters, and similar positions in the stove, and in *I. Leari*, *I. bona-nox*, and the species above mentioned we have other kinds equally useful for cultivation in the warm greenhouse. In the Water Lily house at Kew a number of species and varieties of tropical Bindweeds have been tested this year, and the majority of them have proved comparatively worthless in a decorative sense, the kinds which gave most satisfaction being those here named. They are, however, now all past, except *I. rubro-cœrulea*, which is only just entering upon its flowering career. Being a strong grower, this species requires a liberal allowance of root room, a rich soil, and a good supply of water. Its flowers are funnel-shaped, with a spreading limb 4 inches wide, and are clear porcelain-blue in colour. By cutting them so soon as they open and placing them in a dish of sand and water with a bell-glass over them, these flowers have a novel effect when placed on the dinner table.

Japanese Bindweeds.—The *Ipomæa hispida* of botanists and Morning Glory of gardens is known to all of us as being very variable in the size, form, and colour of its flowers, the many varieties to be found amongst plants of it raised from a threepenny packet of seeds being probably of English or at least European origin. The Japanese are, however, far ahead of us in the number and distinctness of the varieties which they have obtained from this plant, a fact gleaned from the reports of travellers and others who had had an opportunity of seeing Japanese gardening. Just lately several collections of these Japanese forms of *I. hispida* have found their way into this country; one of them we saw a short time ago in the gardens of Sir George Macleay, and a second is now open to inspection in one of the houses at Kew. The plants at Kew are small and weak, owing to the lateness of the arrival of the seeds, but in the flowers borne by many of them are to be seen characters of the most quaint and singular description. Some of the flowers are double, others semi-double, and other differences of form are observable in most of them. In colours they vary from white to almost black, and between

these two extremes there are pinks, lavenders, blues, reds, and browns, all in what are termed selfs; these colours occur again in other flowers with the addition of a white border or white stripes or flakes. In addition to the differences of their floral characters these plants are, many of them, either spotted or edged with yellow in their foliage. The weakness of the plants no doubt affects more or less strongly the size and colouring of their flowers, but even as they are, many of them are beautiful, and all are distinct enough to be desirable. Next year, should these plants ripen seeds, these Japanese Bindweeds may be tested better than has been possible this season.

Exotic Wood Sorrels.—There are no fewer than 220 species of *Oxalis* described in botanical works and figured in various books and magazines; there are, however, perhaps not more than a dozen of them that may be called garden favourites. Notwithstanding this great disproportion between the species known and the species grown in gardens, it is a fact that almost every one of the former is not wanting in beauty and distinctness such as usually win favour among plantsmen. It is strange how some plants are, as it were, picked up, cherished, and grown, and made popular, whilst others equally worthy are totally neglected. As an instance we may point to four genera which are peculiar to or abundant in South Africa, and which were started together in the race for favour in English gardens, viz., *Ericas*, *Mesembryanthemums*, *Pelargoniums*, and *Oxalises*. The first and third genera are now everybody's plants, whilst the other two are cared for by only a few. Now, both the *Mesembryanthemums* and the *Oxalises* are quite as beautiful, as varied, and well marked, and as easy to grow as the now popular *Ericas* and *Pelargoniums*. Last summer we saw the *Mesembryanthemums* at Kew in charming condition, and now we notice in the Cape house of the same establishment a collection of *Oxalises* just commencing to bloom. About a dozen distinct and beautiful kinds were in flower when we saw them; white, pink, purple, yellow and lilac colours were represented, and formed a pretty and novel picture.

Gaillardias.—It is the second week in November, a time when all the gardening world is running mad after big show Chrysanthemums and other fashionable flowers. But whilst all tender flowers have been destroyed by frost and nearly all hardy ones have stopped blooming, there is here some plants of *Gaillardias* that continue to bloom abundantly, and I think charmingly. Early in the summer I was much taken with the double or quilled variety *Lorenziana*, for then when the whole of the bloom develops, it is at least exceedingly pretty, and especially the crimson and orange mottled forms. But now that the flowers open only an outer ring of petals, and the centre remains a body of green closed ones, its beauty is far from striking, although it is a season when almost any flowers, however imperfect, are acceptable. But some of the more common, though still in gardens far too little known, singles, especially *picta* and *grandiflora hybrida*, are most beautiful, and as flowers for cutting at this dull season are worthy of a good place in our gardens. These are not only now as perfect as at any time, but seem to look even brighter than in summer, as the red, chestnut, and crimson flowers, edged with bright yellow, give hues that are striking and acceptable. *Gaillardias* are so easily raised from seed, sown under glass in the spring, that detail seems needless. Very striking kinds may be easily perpetuated by means of cuttings put in during October, and with these the following year it is an excellent plan to reserve some in pots, keeping them pinched and bushy, and finally shifting them into larger blooming pots in August for winter flowering under glass.—D.

Wintering Dahlias.—During the past four winters we have left most of our *Dahlia* roots in the open ground undisturbed and unprotected, and the results are so satisfactory, that this winter we intend leaving all out (about 500) excepting a few scarce varieties and others that must be lifted on account of alterations, &c. We find them late

in starting into growth, thus escaping spring frosts, but they are in bloom quite as early as those started in heat, and produce quite a mass of flowers, and annually gain strength. Many are now veritable bushes, 5 feet high and 6 feet through. Cannas, Gladioli, Lilies, &c., are similarly treated, and with like results. I should add that our soil (if it can boast of the name) is very shaley and open. To those who are so unfortunate as to have similar soils to deal with I should say go and do likewise.—JOHN ROBERTS, *Tan-y-Bwlch, North Wales.*

PLANTS IN FLOWER.

Lapageria alba.—I send you the terminal flowers from a growth, of 8 inches of which there were, as you will see, sixteen flowers, fourteen of which were open at one time, and there are two green flower-buds unopened. It is cut from a very vigorous-growing plant JOHN GARLAND, *Killerton, Exeter.*

* * The flowers sent with this were very fine in every way.—ED.

Late Dahlias.—I send flowers of Dahlia, white Aster, and the Cactus variety, to show you how favoured we have been from frost. The Cactus Dahlia flowers I gathered from a plant in an open position. It is fully 6 feet high and 6 feet through, and has this morning (November 14) forty expanded blooms upon it.—G. CHEQUEER, *Shedfield Lodge, Botley, Southampton.*

* * Excellent blooms for this time of year.—ED.

A gathering of hardy flowers from Messrs. Paul & Son's herbaceous plant nursery at Broxbourne reminds us that the flower season has not yet terminated. Some really fine specimens are sent, including such interesting plants as the following:—

Polygonum vacinifolium	Linum flavum
Crocus longiflorus	Erigeron speciosus super-
Cheiranthus mutabilis	hum
Lithospermum prostratum	Papaver orientale
Campanula muralis	Viola pedata bicolor
glomerata pallida	Callirhoe involucrata
Achillea tomentosa	Iberis gibraltarica
Senecio pulcher	Cyclamen graecum
Sternbergia lutea	Aubrietia purpurea

Belladonna Lilies have been unusually fine with us this season; we have still (November 11) a few flowers left. They are grown under a wall in a sunny situation, 60 yards long, in clumps about 2½ feet apart, in rich soil, and have remained undisturbed for many years, with the exception of surface culture and manuring. On some of the clumps there have been twenty-five spikes of bloom. They should be planted under a south wall and in good soil, and be allowed to well establish themselves. Their spikes look well in vases.—JOHN GARLAND, *Killerton, Exeter.*

Hedychium Gardnerianum.—Mr. Kingsmill sends us a fine flower-spike of this noble plant which he received from Guernsey, where it is grown to perfection in the open air. Messrs. Smith, of the Caledonia Nursery, who sent the spike, say, "Many cultivators think that this plant requires heat, but we think it is quite satisfied with a warm position outside, especially if left alone and on this we think much depends. Hence success often with it comes hand in hand with apparent neglect." This may apply to the Channel Islands, but the plant is certainly better for a little artificial heat in this climate.

Open-air flowers in November.—During the week we have received numerous gatherings of open-air flowers sent from various parts as proofs of the mildness of the month. Among these Mr. Stevens sends from his garden at Grasmere, Byfleet, no fewer than forty distinct kinds cut from the open air. These include the following: Chrysanthemums of various sorts, Irish Heath (*Menziesia*), *Salvia Pitcheri*, Gladioli, *Trollius* (second flowering), Snapdragons, Stocks, *Arbutus*, *Delphiniums* (second bloom), *Phloxes*, hardy *Fuchsias*, *Berberis Wallichiana*, *Ceanothus azureus* vars., *Escallonias*, shrubby *Veronicas*, *Laurustinus*, *Michaelmas Daisies*.

Seeding single Chrysanthemums.—Mr. Burbridge sends us flowers of two good single Chrysanthemums which he has raised in the Trinity College Botanic Gardens, Dublin. Both are pretty, one being of a rich magenta colour, the

other a soft rose-pink. Both have full yellow centres, which add richness to the flowers. There is an elegance and simpleness about these single Chrysanthemums which render them very attractive, and now that raisers are turning their attention to them we may soon see some pretty sorts, which will surely be appreciated.

Pandanus furcatus.—A male plant of this Screw Pine at Kew is now bearing several of its long pendent racemes of large, boat-shaped, yellow bracts, and thousands of small, closely-packed flowers, which when mature are thickly covered with dust-like pollen. At Cambridge we saw last summer a female plant bearing a fine bunch of fruits, which in form were like gigantic Pineapples, with a pair of carved horns on each node. Had these two plants flowered together we might have had *P. furcatus* from seeds ripened in this country. Except when seen in a large state, as at Kew and in the Cambridge Botanic Gardens, *P. furcatus* is not particularly ornamental. It is one of the commonest of the Screw Pines in the Indian Tropics.

Open-air flowers from Wales.—One of the finest and most varied gatherings of open-air flowers we have ever seen in the middle of November has been sent to us by Mr. Roberts, gardener at Tan-y-Bwlch. The climate of that part of Merionethshire must indeed be highly favourable for autumn gardening. The following, amongst others, have been received by us in great beauty, viz: Various kinds of Dahlias, *Berberis Darwini* (second flowering, very fine), *Nicotiana affinis*, *Hydrangeas*, *Pentstemons* (various sorts), *Arbutus*, *Phygelius capensis*, *Laburnum*, Wallflowers, *Mignonette*, *Violets*, *Fuchsias* (hardy), *Michaelmas Daisies* of sorts, *Laurustinus*, Irish Heath (*Menziesia*), *Salvia Pitcheri*, Chrysanthemums (chiefly early sorts), and Hybrid Perpetual Roses.

Flowers in Derbyshire.—I think the bravest flower that I have had this year is the white perennial Lupine. Planted in March, it began to bloom in May, has bloomed continually ever since, and is still (November 11) sending up fresh spikes of bloom. That is what I call a useful hardy plant. *Enothera Youngi* is also still covered with flowers, and has been since July. *Veronica corymbosa* is still in flower, and is one of the most graceful and elegant plants grown, in my opinion. The *Erigerons* also and *Asters* are still in bloom; also *Armeria cephalotes splendens*. I feel a sort of painful curiosity to know whether all my plants put in in March will stand the cold and damp here. It may be interesting to your readers next spring to know the result, and whether it is possible to grow the *Acanthus*, *Alstroemeria*, and *Gaillardia* on the Peak of Derbyshire.—G. H. C.

Pereskia aculeata.—A short time ago we noted the flowering of *P. Bleo* in the succulent house at Kew, and now we observe in the same house a flowering specimen of *P. aculeata*. The rarity of the flowering of this species is no doubt owing to its seldom being allowed to grow into a large plant and encouraged to flower, its chief use to gardeners being as a suitable stock on which to graft *Epiphyllums* and other Cactuses. *P. aculeata* is not as handsome as *P. Bleo*, its flowers being single, the petals a somewhat dirty white, and the sepals green and fleshy in form; the flowers resemble a Blackberry bloom. They are borne singly in the axils of the leaves on the twiggly growths, and last only a day in bloom. In the West Indies the name Barbadoes Gooseberry has been given to this plant from the resemblance of its green fleshy fruits to Gooseberries, for which fruits this plant is here and there cultivated as a garden plant in some of the above islands.

Marie Louise and Neapolitan Violets.—It is gratifying to know that Mr. Crawford (p. 396) has been able to grow the Neapolitan Violet successfully. After repeated trials I have entirely failed to grow it so as to approach the Marie Louise either for earliness, quantity of bloom, or prolonged flowering; therefore I have had, though

reluctantly, to discard it. I send you a box of blooms of Marie Louise from plants that have supplied us with abundance since July, and which will undoubtedly continue to do so until next May, when they will be transferred to the borders from the earth-pits they now occupy. The blooms are not quite so fine as we expect them to be a little later on, for the plants have only been removed into pits a fortnight ago; therefore they have not fully recovered from the check. I think I am within the mark when I say that from this one variety alone we pick flowers eleven months out of the twelve. I have great hopes of Comte Brazza's white Violet proving a fit companion for it, although as yet we have no blooms of it open; but as the plants were only obtained this autumn, they have not had the same treatment as our Marie Louise. I hope to give it a thorough and fair trial during the coming season.—J. R., *Tan-y-Bwlch, N. Wales.*

* * Charming blooms, large in size, deeply coloured, and exquisitely fragrant.—ED.

NOTES OF THE WEEK.

Rose Mrs. Caroline Swales.—This new H. P. Rose exhibited at the National Rose Society's show at Manchester was much admired by rosarians. It is said to be raised from *Mlle. Eugénie Verdier*, colour light flesh, very pleasing, something like *Captain Christy*, but more certain in its bloom. I saw this Rose last year, when a seedling, at Mr. Swales' extensive nurseries at Beverley. As an amateur, having won many prizes for Roses at Malton and Hull, I take the more pleasure in my neighbour's success.—B. E. HAWORTH BOOTH, *Hulbank House, Hull.*

Street trees.—The Rev. Holland Sandford, rector of Eaton, has offered to plant with Lime trees the whole of the road on both sides, from the railway station to the top of the High Street, of Church Stretton, at his sole expense, each tree to be 12 feet high when planted. A committee is in process of formation, and if the town consents to receive the gift, application will be made to the proper officials to permit workmen to commence planting the trees at an early date. The beauty of such an approach to the town cannot be over-estimated. It is intended to call it "The Sandford Avenue."

Royal Botanic Society.—The first meeting of this society since the recess was held on Saturday in the gardens, Regent's Park, Lord Aveland, vice-president, in the chair. A long list of donations of plants and seeds from various parts of the world was read as received since the last meeting. It included a collection of *Acacias* from Australasia and a very extensive collection of ornamental Gourds, many of very quaint form and colouring, from the garden of Mrs. Montefiore, at Crawley. The secretary reported that the society's collection of Chrysanthemums was just at its prime; it contains over 150 varieties of this ancient flower, which, according to historians, was cultivated by the Chinese 3600 years ago.

BOOKS.

"Mushroom Culture Simplified," by an experienced grower, and published by Messrs. Hurst & Son, Houndsditch, is a welcome contribution to this interesting department of gardening. It is a small-sized pamphlet of eleven pages, suitably illustrated, and containing apparently sound practical instruction on the subject on which it treats.

D. G. Mitchell's works.—We have received from Messrs. Scribner, of New York, specimens of the charming books of this writer, i.e., "My Farm at Edgewood," "Wet Days at Edgewood," and "Out-of-town Places." He is a writer of the finest taste, and possesses a true love for country life with the graceful style of a scholar and the insight of a good gardener. Long ago his books have made their way in our country, winning the favour and good-word of our best critics; and we hope they will be better known among the people and lovers of rural life even than they have been. The author is a student of all our own good old writers, while he is perfectly conversant with "rural studies" himself in his own home in New England. These editions which Messrs. Scribner now send us are very well printed.

GARDENS OF THE VILLA TASCA, PALERMO.

THE annexed illustration represents one of a series of photographs recently sent to us by the Princess Mertschersky. They were taken in a garden near Palermo, in Sicily, which is generally admitted to possess the most delightful climate in Europe. When it is stated that the mean temperature of the winter is 52° and that of the summer 74°, it is not surprising that Palermo is quite a paradise as regards semi-tropical vegetation. Being close to the sea, it suffers from no extremes of temperature, while it enjoys a rainfall averaging some 22 inches. The plants represented in the photographs sent are stately specimens of Date Palm, *Chamærops*, *Pampas*, *Arundo*, *Cycads*, and a whole host of other noble and beautiful sub-tropical plants. The Norfolk Island Pine (*Araucaria excelsa*) forms a prominent feature in all the views. It succeeds here admirably, and its towering stems furnished

ROSE GARDEN.

PROPAGATING TEA ROSES.

I WAS interested in the remarks made (p. 376) on propagating Hybrid Perpetual Roses from cuttings. It is a system that I have practised for many years, and is one that may be safely recommended to amateurs who are anxious to get up a stock of any particular variety, but my experience suggests that October, or at least not later than November, are the best months to put in the cuttings. If left until spring many of them die. "W. I. M." explains (p. 377) why they do not succeed so well as those put in during autumn; the fact is the cuttings form leaf growth above ground before they have well callused. The formation of roots comes afterwards, and one would think that the formation of leaves would be

and supplied a very large number of buds during the season. Next to it was a remarkable specimen of Madame Margottin, and equally beautiful was a grand plant of alba rosea. The two varieties that made the least growth, and which were not a success, were Souvenir d'un Ami and Niphetos. The cuttings of these were weak to start with, the plants they were taken from not being vigorous, and they never seemed to get out of their weakly state. I fancy all Tea Roses might easily be propagated by means of cuttings, and my experience suggests August as the best month in which to propagate them. They do well in pots and flower very freely indeed. Were I limited in the selection of pot plants to a very few genera, Tea Roses and Carnations would be amongst them. Let us return to the

PLANTS IN 4-INCH POTS; they made good healthy growth until the pots were well filled with



Garden of the Villa Tasca, Palermo.

with tier above tier of branches give it a distinct appearance from the rest of the vegetation. The Eucalypti also luxuriate to perfection here, and some fine specimens are to be seen in the photographs. Our view is taken from a point looking towards the villa, and gives a good idea of the style of design carried out in the garden. There is an absence of that formal and rigid appearance which one sees in so many South European gardens, but even in this case the grounds are too much cut up by apparently needless walks. "These Tasca gardens, says the Princess Mertschersky, "are open to the public and are full of avenues formed with exotics, such as *Araucarias*, Palms, and *Cycads*, while the rest of the garden contains Cactuses and other South African plants, all of which flourish to perfection. Added to these, a delightful stream of transparent water flows through this beautiful Eden." Such is the kind of garden which one may have in Sicily, and of which we can only expect to have glimpses in our hot-houses in this country.

followed by that of roots; but such is not the case; the growths, after having exhausted the latent sap in the cutting, come to a full stop, and ultimately die.

THE MOST SUCCESSFUL STRIKE of Tea Roses I ever had was effected by taking off the cuttings in August. Six or eight cuttings were put into a 5-inch pot, the 'pots being plunged in Cocoa-nut fibre refuse and covered with close hand-lights. They were not shaded further than by being placed on the north side of a low wall. In something like six weeks they were not only rooted (at least most of them), but had also started to grow. The young plants were potted off singly in 4-inch pots, and being placed near the glass in a greenhouse soon established themselves, and produced flowers in spring. A few of them were planted out, some against walls, others in the open ground, and more of them in pots. Some of the wall plants formed the finest specimens I ever saw of their respective kinds. A plant of Safrano grew with remarkable vigour,

roots, when they required to be repotted into 7-inch pots. That was about midsummer; and here I ought to remark that the time for repotting Tea Roses on their own roots is of some importance. Perhaps it is best to do so when they are in active growth, and midsummer is as good a time as any other. If the roots do not work into the fresh potting material at once or soon after repotting, the new compost gets sour. The same disastrous results happen when a Tea Rose, or, indeed, any other plant, is over-potted; in either case the soil gets into bad condition before it is thoroughly permeated with roots. It is quite necessary to sound a note of warning, as the mistake of potting at the wrong time, and also of over-potting, are being made daily.

THE POTTING MATERIAL is also important. "Clay soil for Strawberries, Wheat, and Roses" is a common saying in which there is truth, but it will not do to pot Tea Roses on their own roots in clay soil; it is not open enough. The best compost, if it can be obtained, is turfy loam from

medium clay; to this add one part of peat, some sand, broken charcoal, and a moderate sprinkling of decayed manure. This compost will grow Tea Roses well, but there are other necessary matters that must be dealt with. One of the most successful exhibitors of pot Roses told me that his Tea Roses were always kept under glass, and doubtless this is the best way in which to manage them. They are entirely under the control of the cultivator and present a decided contrast to those turned out of doors in the open, where they are exposed to all weathers, and are liable to be soaked by heavy rains, which are injurious; besides, they suffer much from mildew as well as green fly. If the plants are kept under glass it is quite easy to keep them clean and healthy. One point must not be lost sight of, and that is the importance of keeping them close to the glass, and the avoidance of crowding them up amongst other plants. I would rather put them out of doors than in a greenhouse amongst flowering plants where the necessities of the case required that they should be constantly shaded from the sun. They require and well deserve a span-roofed house to themselves. It is impossible, however, for an amateur with only one or two houses in which all sorts of plants are grown to be anything like so successful in the culture of any one thing as a grower for Covent Garden Market, for instance.

MARKET GROWERS from long experience know exactly what each plant requires; they will build a house for Tea Roses, and will have nothing else in it, in order that they may study the requirements of that one class only. Their experience has also taught them not to cultivate fifty different kinds of Tea Roses; on the contrary, they will rather fill a house 100 feet long with one or two varieties only, and they will be those most popular in the market, as, for instance, Niphetos, Madame Falcot, or some other popular sort. The chief end of the market grower is to get as much money as possible for his house of Tea Roses, while amateurs please their own fancy, and probably grow a great many distinct varieties. Besides the interesting work of propagation and pot culture, there is a fund of healthy enjoyment in growing

TEAS OUT OF DOORS. The best collection I have ever seen in an amateur's garden was on the west side of the Little Orme, near Llandudno, in the garden of Mr. Samuel Barlow, Shimdda Hir. At the time of my visit (the middle of September last) they were in full beauty. Scores of perfectly developed Roses could be gathered every morning. They had been carefully cultivated, but they had received no more attention than other good gardeners bestow upon their Roses. The ground, a rich deep loam, had been dug and well manured, and the season being dry the Roses had to be watered and mulched with decayed manure; they had also been kept free from that troublesome parasite, mildew. This insidious pest if not checked or destroyed on its first appearance will speedily undermine the constitution of the plants which it attacks. Few people can command such a fine soil and climate as that of the Little Orme; but, nevertheless, Tea Roses may be grown more successfully in gardens than they are in the majority of cases at present. We have been favoured with some very good Tea Roses in our own garden, though the soil is not of the best, nor the situation very favourable. The ground is damp, although drained. Our plan, which is also that adopted by Messrs. Paul and Sons, is to raise the bed about a foot higher than the ground level. Its sides are neatly turfed, and this itself has a good effect. Tea Roses like rich, deep soil; therefore the ground was trenched 18 inches deep, and two layers of good manure were worked in with the trenching; another layer of manure was placed on the surface, and on that the soil intended to raise the ground to the required height. Some might perhaps think so much trouble and expense as this quite unnecessary; but it is a mistake to suppose so. The basis of all good cultivation out of doors is the preparation of the ground, whether it be Roses or Pumpkins. The complaint which one too often hears when crops fail is that the

soil or the garden does not suit them, while all the time it is not the soil that is at fault, but the cultivator, who has not taken sufficient pains to get it into suitable condition. The Roses in Mr. Barlow's garden were budded on the seedling Brier and on the Manetti. Those on the latter seemed to have the greatest profusion of bloom, while those on the seedling Brier were larger, and what the judges at an exhibition would call better in quality than the others. I noted a few of

THE BEST AUTUMN-BLOOMING VARIETIES, and append a list of their names. They are all good growers, and produce at the same time a profusion of bloom. The pale yellow *Perle des Jardins* is excellent in the bud state; *Anna Ollivier*, rosy salmon, full sized and distinct; *Ma Capucine*, very free; *Amazon* also good in the bud state, lemon coloured; *Madame Hippolyte Jamin*; *Madame Charles*, buff; *Souvenir de Paul Néron*, very pretty, white with rose blush; *Madame Willermoz*; *Madame Angèle Jacquier*, blush, large flower; *Etoile de Lyon*, sulphur; *Comtesse Riza du Parc*, large salmon-rose; *Alba rosea*, a well-known good Rose; *Devoniensis*, also very fine; *Madame Joseph Schwartz*, a pretty blush white kind; *Souvenir d'Elise Vardon*, superb Tea Rose; *Safrano* and *Madame Falcot*, two of the best to cut in the bud state; *Reine Marie Henriette*, a distinct Hybrid Tea of a deep rosy red tint; *Hon. Edith Gifford*, the best of the new Teas, rosy salmon colour; *Catherine Mermet*, flesh, superb Rose; *Madame Lambard*, also a superb kind; *William Allen Richardson*, quite unique in its distinct colour and profusion of bloom, but it is a Noisette; *Beauté de l'Europe*, brownish yellow; *Madame Berard*, a neat and pretty flower of the *Gloire de Dijon* type; *Jean Ducher*, a handsome kind; and *Marie Van Houtte*, yellowish. The above is merely a selection, but they are carefully selected as the best autumn bloomers and the most vigorous in their respective colours. J. DOUGLAS.

SEASON FOR PLANTING ROSES.

THIS has once more come round, and there is likely to be more Roses planted this November than in any former season. The taste for and love of Roses are constantly extending and becoming stronger. There is no prospect of either reaching their utmost limits for many years to come. Go where one will, Rose nurseries are broadening out into farms, and the Rose farms are adding field to field until there is little more space near to them for Corn or Mangold. New Rose nurseries are also starting up in all directions, and the signs of the times all point to the elevation and expansion of the rosy side of horticulture, until it far outruns all other branches in commercial value and horticultural importance. Society almost seems smitten with the Rose fever, a far milder and more hopeful malady than that of any previous floricultural fever through which it has passed. The Rose family is so rich and varied, that there is no fear of any dangerous run being made on one colour, as was the case with scarlet Geraniums, for hardly does the rosarian dip deeply into the scarlet or crimson sections than he becomes enamoured with the softest pinks, primroses and whites; and so the intense colourists find alike bane and antidote among the Roses. Nor only this, but the set of the current of fashion is now in the direction of the softer and more delicate colours, and even colourless, that is, white Roses. For example, that rather old Rose *Niphetos* has had quite a *renaissance* of late. From being but seldom seen, it is now met with everywhere, and is having walls and houses all to itself in all directions. It is only second—if indeed it be second—in popularity and commercial value to the famous *Maréchal Niel* itself. For many, it may almost be added most, purposes the whiteness of *Rose Niphetos* gives it a decided advantage over the golden-coloured *Maréchal*. The form and size are also far better for bouquet and wreath work. Considering the wonderful usefulness of pure white Roses with tapering buds, it is surprising that we have as yet so few of them. It is hardly too much to affirm that all our white

Hybrid Perpetual Roses, with the single exception of *Boule de Neige*, which is hardly a Hybrid Perpetual, though classed among them, are useless for bouquet and general decorative purposes. The later additions to the white Hybrid Perpetuals, such as *White Baroness*, are no better than the earlier attempts at white Perpetuals; and we are yet destitute of a second good white Tea. The more the pity. But I did not intend to discuss the merits of particular Roses, but rather to urge the immediate planting of more of all the best. As, however, *Niphetos* has been named, it may be added now that no Rose is more deserving of a warm south border or south or west wall than this same *Niphetos*. On a warm southern border, and with a slight covering of litter and boughs, *Rose Niphetos* will winter safely. Should the tops get killed down to the ground, no *Rose* thrives better treated as an annual than *Niphetos*, for hardly has it sprung up 6 inches or so from the ground than the young shoots break into flower-buds. It is this habit of perpetual growth and successional blooming that gives such special value to this *Rose*. On a warm wall it is still more useful than in the open. But having said so much about *Niphetos*, a word of caution must be added against planting it extensively, or at all, at this season of the year. Better get the ground ready for it now by deep trenching and liberal manuring, and adding cinder ashes, charcoal dust, &c., if too heavy, to lighten it; leave it to sweeten all winter, and put out the plants of *Niphetos*, or other Tea Roses, and *Maréchal Niel* next spring or summer; but now is the best time to plant out all the Hybrid Perpetual and other Roses. And to return to our starting-point, not only is more than an average number of Roses likely to be planted this November because the fashion is in full swing rosewards, but also on account of the compound crippling force of the severe frosts last April and the semi-scorching heat of the past summer. Whatever may be true of the *Rose* species, our cultivated varieties of the *Rose* are by no means tropical plants; they suffered so severely from the heat of the last summer, that a good many have perished this autumn, and many more are so abnormally weak that they are hardly likely to recover. One of the most singular incidents of the *Rose* season just closed was the widely different effects the heat and the drought had on the *Roses* and the wildling *Briers*. While the *Roses* suffered severely, the *Briers* appeared to luxuriate in the tropical heat, and turned out the finest and strongest we have had for years. Wherever and whenever it is practicable to plant *Briers* where they are to remain and grow into *Roses*, let this sensible and successful plan be adopted. The plants will thus grow into *Rose* trees or bushes in far less time than by any system of transplanting afterwards, and the chances are they will also be more vigorous and durable. Neither is there anything unsightly in planting *Briers* on the site of the *Rose* bed or borders in the case of those amateurs and others—a constantly growing class—that bud their own *Roses*. Our last ramble among the *Roses* consisted in dibbling in two long lines of *Tea Rose* cuttings at the back of *Rose* borders. The cuttings averaged 6 inches long, all duly beeled, put in firmly, and we expect most of them to grow and form a couple of hedges of *Teas* before the autumn. D. T. FISH.

Anthracite coal.—"Alpha" (p. 312) asks for information as to the suitability of this for horticultural purposes and its relative value to coke and hard steam coal. After eight years' trial I have proved it to be about one-third less costly than coke or other coal, although the price per ton here is £1. It gives a more regular and much longer lasting heat than either coke or ordinary coal. It does not light quite so easily, but this slight difficulty is not worth consideration. It is said by some that it will not burn except where there is a quick draught, but we find no difficulty in this respect, as it is generally used in the house grates as well, where it burns freely. In the heating apparatus we use one-fourth chalk with it. The coal is placed evenly over the bars, and then

the chalk in 3-inch cubes is placed in an even layer over the top and left undisturbed. By this means a more moderate, more uniform, and much longer lasting heat is secured. It is also more economical than when coal only is used, and the chalk effectually prevents clinkers being formed on the bars; the lime is afterwards found very useful as manure in the garden.—W. C. T.

FRUIT GARDEN.

APPLES AND APPLE CULTURE.

(Concluded from p. 399.)

If the situation for an orchard or fruit garden is not naturally sheltered, a screen of some quick growing trees, such as Austrian Pine or Spruce Fir or common Holly, should be planted thickly, as then they nurse each other, but should be thinned out before they become so thick as to injure one another. They should be planted on the east and north-east sides, and should be sufficiently distant from the fruit trees not to overshadow them or impoverish the land in which they are growing.

SOIL.

The Apple may be grown in almost any description of soil, provided it is well drained, but it succeeds best in a moderately heavy fibrous loam. Should the land to be planted be of a dry sandy character, it will be much improved by adding a heavy dressing of marl, and afterwards trenching it from 12 inches to 15 inches deep; but if the situation is low and wet, it should be thoroughly drained and thrown up into broad ridges. A row of trees should be planted along the middle of each ridge, leaving the sides to be planted with cordons or bush fruit trees, as may be desired. In cases where it is inconvenient to throw the soil into ridges it would be advisable to draw in the surrounding soil, or to wheel in a few barrowloads of good soil to form a mound on which to plant each tree. In filling up blank spaces where fruit trees have been grown for a number of years, the soil for a considerable distance round where they stood will have become exhausted, and may contain the eggs of injurious insects; therefore the whole or a large proportion of it should be removed, and its place supplied with good loam from a field which has been pastured for a number of years and on which no trees have previously been grown.

PLANTING.

Success in fruit growing very much depends upon keeping the roots near the surface; deep planting is the source of many of the diseases to which fruit trees are liable. Canker, Moss, and blights of various kinds seldom attack trees that have been planted properly and under suitable conditions. It is a great mistake to make a hole and thrust the roots therein, and then expect a tree to thrive and bear fruit. Early autumn is undoubtedly the best time for planting, because the wounds unavoidably received in the process of lifting soon heal over and fresh rootlets are formed; the plants therefore become, to a great extent, established before severe weather sets in, and in the following spring, if they have been removed with reasonable care, they will start into growth with almost as much vigour as if they had not been transplanted. Another point in favour of early autumn transplanting is the fact that the temperature of the soil is considerably higher at that time than during the winter and spring months. Moreover, the moist atmosphere generally prevailing at that season diminishes the amount of evaporation carried on by means of the bark, and consequently the demand made upon the roots is not so great as it would be at a season of the year when the weather is warmer and drier. Previous to planting, a space from 3 feet to 4 feet square should be covered with flags, slates, or concrete, placed at such a level that when the tree is planted over them the flags or slates will be from 8 inches to 12 inches below the surface of the soil, so that any descending roots coming in contact with them may be made to take a horizontal direction, and by

this means be kept from striking down into the cold crude subsoil. In our damp climate wood will not ripen well unless trees are planted high and their roots kept near the surface. In planting, spread the roots out in all directions and cover them with soil not more than 6 inches deep. Immediately after planting, the tree should be securely staked if required, which will always be needful, except in the case of very small bushes or maiden trees. The best way of doing this is to take a stake of sufficient length and strength and drive it into the ground, at an angle of 45°, 2 feet to 3 feet from the base of the tree, so as to avoid any injury to the roots or displacement of the flags or slates on which the tree may have been planted. The main stem of the tree should then be firmly fastened to the stake, by means of a handful of straight straw passed round the tree, and securely tied with tarred cord on the side next the stake; then part the ends of the straw and place it round the stake, to which it should be securely fastened. The bark of trees staked and tied in this way receive less injury than by any other method with which I am acquainted. After planting and staking, the ground so far as the roots extend should be covered with fresh, littersy manure or with leaves, to exclude frost, and also to prevent the escape of heat and moisture. Fruit trees, especially such as have been transplanted or root-pruned, should be carefully watered during the following spring and summer months if the soil becomes dry, but watering is seldom necessary on heavy soils. The land if not laid down for pasture should be kept free from weeds, and should frequently have the surface stirred with a Dutch hoe, particularly if the weather is dry and windy, as it tends to prevent too great an evaporation of moisture from the soil. The ground, so far as the roots extend, should not be dug, as it is impossible to do so without destroying some of the surface roots, thus defeating the object in view, viz., keeping them near the surface.

FORM OF TREE.

Apple trees may be trained in various ways, but for ordinary garden culture the pyramidal form is the best. This form of tree offers many advantages to the cultivator compared with standard trees. It is at a more convenient height for pruning, cleaning, or gathering the fruit, and is not so liable to be injured by high winds, which frequently damage trees to such an extent as to render them almost useless for fruit-bearing. Pyramids on the Crab or free stock should be planted from 10 feet to 12 feet apart, but if on the Paradise stock, from 6 feet to 8 feet will be sufficient; at that distance the trees will not overshadow each other, and will allow of a free circulation of air among them. The intervening spaces may be cropped with vegetables or planted with bush fruit trees until such time as the roots of the Apple trees occupy all the ground. Pyramidal trees should have a straight centre leader or main stem, from which the side branches are produced at regular distances apart; they should be well furnished with branches sufficiently distant from each other to admit of a free circulation of light and air to the centre of the tree, and also to avoid injury to the bark from rubbing against each other during high winds. When the bark is injured canker usually sets in, and the result is the loss of the injured branches. The lowermost branches should be 12 inches above the ground, and should be stronger and longer than those immediately above them; otherwise if the upper branches are allowed to extend beyond the lower, the latter will cease to grow vigorously and will in time die off, thus spoiling the symmetry of the tree. Standard trees are most suitable for planting on land to be sown down for mowing or pasturing sheep. They should be planted 25 feet apart each way; they should have a clean straight stem 6 feet high, on the top of which there should be from four to six branches of equal strength, which should diverge in the proper direction; from those as many side branches should be allowed to grow as may be required for forming a uniform and equally balanced head. From want of attention to this

matter many trees become spoiled in the early stages of their growth, an error which no subsequent pruning can correct.

Summer pruning of pyramids and bushes when necessary should be performed during the latter half of August, but it is injurious if done much earlier, as then it causes a number of immature growths to be produced that have to be cut away at the winter pruning. Our practice is to commence on the upper half of the tree, to shorten all the lateral growths to 6 inches, and a week later to treat the lower half in the same manner. This admits a free circulation of air to the centre of the tree while the influence of the sun will improve the flavour of the fruit and bring the wood into a higher state of maturity. The leading shoots at the ends of the branches should not be shortened until winter.

ROOT PRUNING.

Young trees frequently produce gross wood at the expense of fruit, particularly when the roots go down into the subsoil. When this occurs the best remedy is root pruning, which should be performed when the trees have finished their growth for the year and before the leaves fall off. The best way of doing it is to dig a trench 2 feet deep all round the tree and at a distance of from 3 feet to 6 feet from it, according to the size of the tree, and sufficiently wide to enable the workman to undermine the ball of earth beneath the bole of the tree. Then proceed to reduce this ball of earth so as to ascertain if there are any roots which strike downwards. If any are found, they should be cut clean away, all thick roots shortened back, and any that may have been bruised during the operation should have the injured parts removed. In trimming the roots a sharp knife should be used, placing it under the root and making a long slanting cut in an upward direction. From this a large number of fibrous roots will be emitted, which will greatly assist the tree in bringing its fruit to maturity. If it is thought desirable to retain any roots that are too deep, they should be brought near the surface. The soil may then be put back into the trench, using a little fresh loam to cover the roots, making it firm as the work proceeds. Then apply a mulching of fresh manure to the surface to assist the formation of root-fibres by keeping the soil in a moist, warm condition. The roots of young fruit trees should be pruned every second or third year, according to the quantity and strength of the wood which they make, until they are in a free-bearing condition, when it may be dispensed with, as there is nothing better than a good crop of fruit for checking over-luxuriance.

I am convinced that the subject of root pruning has not received from cultivators the amount of attention to which it is entitled. It is quite a mistake to severely prune the head of a tree with the idea of checking its growth and making it form fruit buds. A much better plan would be not to prune at all, so that the roots would have enough to do in supplying nourishment to the already existing branches instead of forming new ones. In cases in which the fruit has set so thickly that the tree cannot bring all to perfection, it will be advisable to thin out all small or unsightly fruit and any that are shaded by overhanging branches. Then apply a mulching 6 inches in depth of rich decomposed manure, for as I have frequently noticed when fruit trees are allowed to carry a heavy crop in one season, the trees become so exhausted that they are not in a proper condition to bear a crop the following year. It is not necessary that we should have to wait eight or nine years from the time of grafting before the trees bear fruit. By a judicious system of root-pruning (or transplanting, which necessarily amounts to the same thing), Apple trees may be induced to bear fruit while they are very young and small. This was clearly proved by the sample of Apples which were staged at the Chrysanthemum show held in Manchester last year. The fruits then shown were gathered from trees four years from the graft and less than 24 inches in height, the second crop off the same trees.

BRANCH PRUNING.

The principal object of pruning is to thin out the branches so that light and air may penetrate every part of the tree, and that the fruit may be equally distributed over it. The winter pruning should be performed as soon as possible after the fall of the leaf, in order that the wounds may soon heal over and be less liable to injury from loss of sap than if pruned during spring. Pyramidal-trained trees should have the lateral growths cut back to within two or three buds of their base, with the exception of any that are required to form fruit-bearing branches; these should be cut back to a bud that is growing in the direction in which the branch is wanted to grow in order to form a symmetrical tree; also any branches which cross each other and all dead spurs, together with unripened growths, should be removed. The terminal shoots on the ends of the branches should be left from 12 inches to 18 inches in length, according to their strength and the size which the tree is intended to attain, being careful to cut each shoot a little shorter than that immediately below it, and to cut to a bud that is pointing in the direction most desirable for the extension of the branch. When the tree is sufficiently large the leading shoots may be treated in the same way as lateral growths. Standard trees should be allowed to assume their various habits of growth, simply thinning out any misplaced or superfluous branches to prevent the fruit from being blown off by wind-waving; dead spurs and watery shoots which frequently spring from the branches and trunk of the tree should also be removed. In pruning always use a sharp knife and draw it in an upward direction, leaving a smooth, clean cut, and in removing young wood leave about an inch of the shoot above the last bud. But in removing a branch cut it as close as possible to the stem or branch from which it proceeds, so that the bark may cover the wound the sooner. When a saw is used to remove a branch the cut part should afterwards be knotted over with a knife, and a coat of painter's knotting applied to exclude moisture.

RENOVATING OLD TREES.

The safest and best way of renovating old and neglected fruit trees such as have not had either roots or branches pruned for a number of years is to cut out all dead wood and any branches which cross each other; then give the heads of the trees a dressing of lime to remove Moss, &c.; if they are affected with blight or scale, paraffin must be substituted for the lime. If too weak to produce fruit, it will be best to remove a few inches of the surface soil and substitute a mixture of good loam and manure. Over-luxuriant trees should have a trench taken out at a suitable distance from the bole and be root-pruned, as I have already directed. Only one-third of the roots should be operated on in one season, as it is much safer than cutting back all of the strong roots at once. I have known cases in which the strong roots of old trees which had not been systematically root-pruned for a number of years were severely shortened back, but such treatment has often been followed by the destruction of the trees.

MOSS AND INSECTS.

For destroying Moss or Lichen on fruit trees there is nothing better than lime thinned to the consistency of whitewash and strained through a fine sieve or thin canvas to keep out all rough sediment. It will then be ready for applying to the trees with a syringe or garden engine. In this way we can go over the trees much quicker and cover them more effectually than by using a dredger and dry lime. For the destruction of scale and American blight I have tried several of the many preparations now offered to the public as being infallible for the eradication of parasites, but I have found none so cheap or effectual as soft soap and the ordinary paraffin oil of commerce, prepared in the following way: To make 4 gallons of the mixture take half-a-pound of soft soap and a half-pint of paraffin oil; place them in a bucket or other suitable vessel, and add a quantity of boiling water; stir the mixture well until the soap is dissolved and then add the remainder of the

water. The mixture may be applied with a syringe or garden engine to the trees which are affected, and is more penetrating when used at the temperature of 120° than it would be if used cold. The small quantity of oil which falls on the earth will not injure the roots. I find no difficulty in getting the paraffin to mix with rain water if treated in the way just described.

BEST VARIETIES TO PLANT.

This is not so easily determined as some may imagine; not because there is any scarcity of sorts, but because they are so numerous. I would advise anyone intending to plant to ascertain before purchasing the correct names of good varieties which succeed best in the district in which he resides, for it frequently happens that those which do well in one district will not thrive in another, owing to the difference of soil and atmospheric conditions. I have no hesitation in stating that even in the neighbourhood of Manchester, by planting the right sorts in sufficient numbers and treating them in the way described, we should be able to grow fruit enough to supply all our wants, except in very unfavourable seasons. Thus we should retain at home the thousands of pounds which now pass every year into the pockets of the foreigner as payment for Apples which we import. I can strongly recommend the following twenty-four varieties, twelve dessert and twelve culinary, as being suitable for growing in the midland counties, especially near Manchester; all of them have borne good crops during the last seven years, even when climatic conditions have been unfavourable for their production. The list of dessert Apples contains some of the earliest and latest sorts, which I have placed in their order of ripening as follows: Devonshire Quarrenden, Kerry Pippin, King of the Pippins, Barchard's Seedling, Winter Pearmain, Cox's Orange Pippin, Mannington's Pearmain, Ribston Pippin, Adam's Pearmain, Court pendu Plat, Nonpareil, Sturmer Pippin. The culinary varieties I have divided into four groups of three each, and have placed the name of the best sort first in each group. As it is not necessary that culinary Apples should be perfectly ripe when used, my object in thus dividing them is that the inexperienced grower who may require only three or four should not select all from the early to the exclusion of the late-keeping varieties. The best three early varieties are Grenadier, Lord Suffield, and Pott's Seedling. These ripen their fruit early in the season, and therefore should be used first. The second group consists of Echlinville Seedling, Stirling Castle, and Hawthornden, which will form a good succession; in the third group we have Cellini, Wareham Russet, and Dumelow's Seedling. The best late varieties are Golden Noble, Alfriston, and Northern Greening, and if these are carefully gathered and stored in a suitable place, they should keep sound and firm until such time as the next year's fruit is ready for use.

GATHERING AND STORING.

In gathering the fruit it is advisable to go over the trees two or three times, each time selecting only those that are ready. This may easily be ascertained by gently lifting each fruit, so that the stalk is in a horizontal position; if the latter then parts freely from the wood it may be assumed that the fruit is ripe. A large quantity of fruit is spoiled every year by being gathered before it is properly matured. The Apples when gathered should be at once taken to the fruit room and there placed on wooden shelves free from hay or straw, as these deteriorate the flavour. All fruit should be placed in single layers, and should remain undisturbed until required for use. It should be frequently examined for the purpose of removing any decaying ones, for if these are allowed to remain they injure the others. The fruit room should have a northern aspect, for in such a position it will be less liable to sudden fluctuations of temperature. It should be provided with the means of giving ample ventilation when required, and provided with hot-water pipes for the purpose of drying up superabundant moisture as well as to exclude frost. The windows should be

furnished with shutters to keep out light and cold. The temperature may range from 40° to 45°, but frost must be carefully excluded. W. NEILD.
Wythenshawe Hall, Northenden, Cheshire.

PACKING FRUIT.

It seems shameful how good fruit is at present sent to our markets. We bought a bushel of Blenheim Apples the other day, and whilst many were big on the top, some in the middle were not fit to be offered for sale. This is the way in which people put up their fruit. Some do not condescend to put even a few good ones on the top, but send all rubbish, so that they do not bring the cost of their carriage to the market. Anything more short-sighted and foolish cannot be imagined, or more detrimental to trade, which, of course, will go to the Americans, Canadians, or foreigners, who pack well, and give the salesman a brand he can depend upon. Bad cultivation and want of thinning the shoots are the cause, no doubt, of this bad fruit. But why send it? It is much more profitable to turn it into the ground as manure, if there be no better use for it. As an example of different ways, we would refer to the Canadian barrels of Apples which have been coming for some years, and which please the buyers so much that they actually hinder the sale of the less well-packed American fruit. Everybody is humbugged by this mixing up of all sorts of quality—the cook, whose labours are so much forwarded by getting things all of a size, whether Potatoes or Apples; the buyer, the salesman, who is partly held responsible for the bottom of the box, and the grower himself, on whom the whole thing reacts. The most remarkable advance we have seen in packing this year is in the French manner of sorting Duchesse Pears and classifying them according to size, so that one may get them in the London market in boxes just as may be desired. The plan has succeeded admirably, and the sale this year has been very large. In America and France we believe there are syndicates or public bodies of growers, which are formed for the purpose of teaching the grower the necessity of care in this direction, or which supervise the deliveries themselves. However the end be arrived at, we are certain that our own fruit growing is not likely to pay until there is a wholesale change in the way of packing and sorting. How anybody can send a lot of rubbish—windfalls, as we have often seen—to Covent Garden, or any other market in the face of the splendid supplies that come from various countries, surprises us; and yet much of our own country can grow excellent fruit, and fruit which, when good, brings a better price in the market than foreign fruit will ever do. A very large area in Southern and Western England may compete with France and America in the growth of the Apple; but young, vigorous, and well-cultivated orchards, some care in pruning and thinning, and, lastly, vigorous sorting of the fruit into two good sizes, and the rejection of all useless fruit, are essential.—*Field.*

Mildewed Grapes.—What is the cause of Grapes becoming mildewed? For the last two years a friend of mine has lost all his Grapes through mildew, and I hear of others who are suffering from the attacks of this fungus.—H. N.

* * There are several predisposing causes, the more common being cold currents of air, a stagnant atmosphere, and lack of water at the roots. Obviously, therefore, the remedy is to avoid these evils. The best treatment to adopt with mildewed Vines is first to decide from which of the causes named the evil arises, and this being settled and treatment given accordingly, the destruction of the fungus must then have attention; and it is by no means a difficult task, though it frequently entails the loss of a quantity of fruit, particularly if the pest has got a strong hold. Mix sulphur with water to the thickness of paint, and with a brush made of matting apply it to the Vine stems; also paint the hot-water pipes, and syringe the walls and floors with a thinner mixture; this done, keep a gentle heat—not hot—in the pipes,

and a little air on all night and more by day, and in a short time the mildew will disappear, and a recurrence will not take place if due regard be had anent prevention by avoiding the predisposing causes named above.—W.

GARDEN DESTROYERS.

GALL MITES.

(PHYTOPTIDÆ.)

THE Acari, or mites, are a very numerous and ubiquitous family. They may be found on our

over them. These mites are very small and are hardly visible to the naked eye, yet they are able to make their presence known in a very apparent manner. Most persons are familiar with the bunches of twigs on Birch trees commonly known as witches' brooms, which may at first sight be taken for birds' nests, but which are really the work of colonies of a little mite belonging to the genus *Phytoptus*. The leaves of the common Maple may frequently be found studded with little red roundish galls, like small coral beads, or the leaves of the Lime with long pointed excrescences commonly called nail galls (fig. 8). These are also caused by mites belonging to the same genus. These mites are very sluggish in their movements, and do not spread rapidly, being often found on one particular tree, while others of the same kind and close to it are not attacked. They do, however, pass from one tree or plant to another in course of time, probably being transported by the wind or birds: They have no means of flying, and, unlike most mites, which have four pairs of legs, they have only two, so that without some accidental assistance it would be almost impossible for them to travel from one tree to another. The life and history of these little creatures are by no means properly understood. Some persons are of opinion that these four-legged mites are only immature specimens of other kinds; others believe they are fully developed. I am of this latter opinion. I have examined numbers from the buds of the common Hazel, and have never seen any showing signs of any departure from the ordinary form. Another question is, Do the mites hibernate, or do they die, having previously laid their eggs in some suitable place where they may safely hatch in the spring? As regards those which infest buds, either of these courses would be an easy matter, but it is very different with those which make galls on leaves. The leaves fall in the autumn; if the mites or their eggs fall with the leaves, it would be impossible for the old or young mites to reach the new leaves in the spring, so one must imagine that before the leaves drop the mites must leave the galls and seek the stems, or more probably the buds, to find winter quarters in or places in which to lay their eggs. A great number of our trees and plants are attacked by these little creatures, though, except in a few cases, they do not cause any appreciable injury, Nut bushes, Currant bushes, Birch, and Yew trees being attacked by species which live in buds; while those which form galls or curl the leaves attack the Alder, Apple, Ash, Birch, Beech, Elm, Hornbeam, Horse Chestnut, Lime, Maple, Mulberry, Oak, Pear, Plum, Poplar, Scotch Fir, Vine, Walnut, White Thorn, Willow, Clover, Salvias, and Strawberry plants. When a tree or plant is badly infested, no doubt it is much injured by the loss it sustains from so many of its leaves being rendered useless, or its buds abortive. It is those species which attack the buds which are most destructive.

Nut and Currant bushes are sometimes seriously injured by the majority of their buds being spoilt by numbers of these mites feeding on the juices of the leaflets they contain. This action of the mites seems to almost entirely arrest the growth of the leaves; they never develop properly, and increase but little in size; the bud merely swells and opens somewhat (figs. 1 and 5). On cutting such a bud open and examining it under a microscope hundreds of the mites may be found between the leaflets. When those species which form galls attack leaves, the latter will be generally found more or less covered with little raised excrescences or galls, and though trees attacked in this manner are not so much injured as those whose buds are destroyed, they are much weakened by so many of their leaves being rendered useless. These galls are perhaps more folds or pockets in the leaves than real galls (figs. 8, 9, 10), for they are all open at the bottom, and are probably commenced by a mite or mites feeding at a part of the under side of the leaf, which then grows more rapidly than the rest of the leaf, owing to an increased flow of sap induced by the irritation of the mites, and gradually forms a chamber round them. True galls, such as are made by the grubs

of gall flies, two-winged flies, some saw flies, and other insects, are formed in a different manner, the abnormal growth entirely surrounding the insect, and in the midst of which it lies in a cell a complete prisoner. The galls formed by gall mites are frequently lined with hairs, and the mouth is generally furnished with a tuft of hairs and is on the lower side of the leaves. Some species attack the edges of the leaves, which then begin to curl, and thus afford them protection (figs. 11 and 12). Quick-set hedges are sometimes for yards together attacked in this way, the edges of nearly every leaf being rolled up, giving that part of the hedge a very strange appearance. The plants attacked must be considerably injured by their leaves being treated in this manner. As the mites so thoroughly shelter themselves either in buds or leaves, it is clear no insecticide can be of any use, unless their winter quarters could be found, when it is possible it might then be made to reach them; but even then, as they are very tenacious of life, it would not be of much use. The best means I can suggest for getting rid of them is by removing the infected parts and burning them; or if thrown on the rubbish heap it



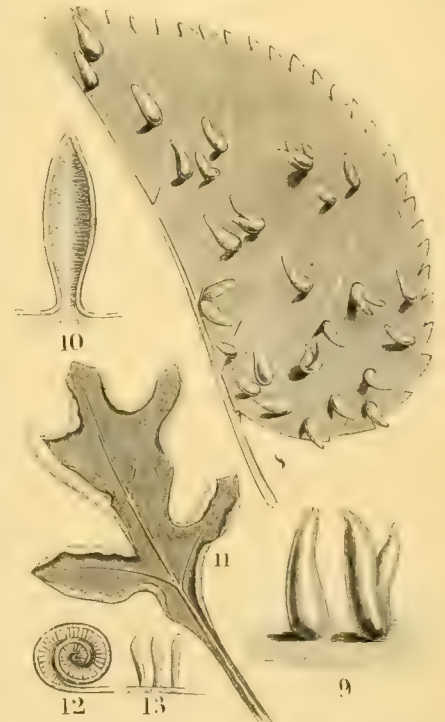
1, Birch buds attacked by mites (natural size); 2, commencement of witch's broom (natural size).

trees and plants, our domestic animals, in our food, and not unfrequently on our own bodies



3, section of Birch bud (magnified); 4, Hazel buds distorted by mites (natural size); 5, gall mites (much magnified).

even. The red spiders and gall mites, &c., attack our plants, &c.; ticks and louse mites our animals and birds; and cheese mites and their near allies our food; harvest bugs, itch mites, and some others our bodies. The gall mites are a division of this family which live on trees and plants. They cause an unusual growth of the tissues of the leaves and buds which they attack, which in many cases form a complete covering or gall



6, Lime leaf with nail galls (natural size); 7, nail galls (magnified); 8, section of nail gall (magnified); 9, White Thorn leaf rolled by mites, under side (natural size); 10, section of roll (magnified); 11, transparent stout hairs from roll (magnified).

will not much matter, as the mites will not be able to regain the trees. All the *Phytoptidæ* resemble one another very closely and are very minute, being less than 1-100th of an inch in length. On account of their minute size and the difficulty, owing to their fragileness, of mounting them for examination, I have been unable to detect any difference between the species which attack the Birch, Hazel, and White Thorn, except that the last-named does not appear to have the two long curved hairs near the tail; but I have no doubt that they are different species.

These mites (figs. 6 and 7) are cylindrical, long, and narrow. They are widest where their cephalo-thorax joins their body; they taper gradually towards the tail, where their body is somewhat curved downwards, and is terminated by a bilobed sucker. The front part of the body (cephalo-thorax) is striated longitudinally, and the remainder of the body transversely; between every two of the latter striae is a row of minute tubercles. Nearly all the Acari have four pairs of legs, but the mem-

bers of this genus have only two. This has much puzzled entomologists, and made some think that they are only immature specimens of some other species. The four legs which these creatures have are what would be the first two pairs in other mites. On either side of the body near its base is a long, stiff hair, and near the tail are two stiff curved hairs. When the mite moves, it crawls with its legs and moves its body forward in rather a worm-like manner, clinging on with the sucker at its tail now and then. It is able, having taken a good hold with this appendage, to raise its body into an erect position; the use of the bent hairs is not very obvious. The witches' broom in the Birch trees are formed by *Phytoptus betulinus* in the following manner: The mites attack a bud, which then grows (as in fig. 1, and of which fig. 4 is a magnified section); from this bud various shoots and buds grow. These are in turn attacked by the mites, and gradually the commencement of a "broom" is formed (fig. 2). This eventually grows by the mites continually distorting the buds into the well-known tangled mass of twigs. The species which attacks the Hazel buds (*Phytoptus coryli*) go to work much in the same manner, but the result is merely the abortion of the bud (fig. 5). Those which form the nail gall on the Lime leaves (*Phytoptus tilia*, fig. 5) and other galls attack the leaves at various points, from which, as before mentioned, the leaf grows, forming a chamber over them (figs. 8, 9, and 10). White Thorn leaves when infested behave in a very different manner. The mites (*Phytoptus oxycanthæ*) congregate near the edges underneath, which cause them to curl over towards their lower sides (figs. 11 and 12), and that part of the underside which is thus enclosed is covered with short, stout, transparent hairs (fig. 12); among these hairs the mites may be found. The part of the leaf thus rolled up is paler in colour than the rest.

G. S. S.

INDOOR GARDEN.

CHEAP BULBS.

I QUITE agree with all your correspondent "Cambrian" says about the worthlessness of cheap sale bulbs. When I started to grow a few flowers, I went to some of the bulb sales, but found the bulbs to be small and worthless, and not a name or description, as pointed out by "Cambrian," could be depended upon. No one who knows anything of bulbs ever goes near auction rooms. There is, however, a large number of amateurs who understand little of such matters who buy such bulbs, the offscourings of fourth and fifth-rate Dutch gardens. As an amateur who has grown large numbers of Dutch bulbs for twenty years, and who is careful to buy in the most economical way, I should advise all to buy from thoroughly respectable seedsmen. A bulb is a curious thing. For example, a Hyacinth takes from four to six years to attain perfection. The first year of its cultivation it has no bloom at all; the second year hardly any; the third a little more; its fourth a fair bloom; fifth and sixth years a strong bulb, and large massive spike of bloom. It is essential to get thoroughly matured and well-cultivated bulbs, otherwise their flowers are of the most disappointing kind. These cheap sale bulbs that I have seen are of second and third years' growth and quite immature, and not a third of the size and weight they should be. I cannot say how a gardener with some hundreds of these cheap bulbs under his charge would feel, but I can speak feelingly from my own experience of them. After buying scores of pots for them, spending much time and money to procure proper soil, potting and carefully watering, and tending them night and day, the result was of the most paltry kind—a lot of worthless little spikes. The same trouble, expense, and anxiety would have produced me magnificent spikes had the bulbs been genuine and fully matured. Nothing can be worse, therefore, than to save a few pence by buying at cheap bulb sales. When we make a bad bargain in business, its results often end the same day; but after the bad bulbs are bought, with

them the matter does not so easily terminate. Pots are bought; good soil bought or procured; they are watered, and most carefully ventilated and tended day and night for, say, five or six months, when it is found that all this expense and well-nigh half a year of anxious trouble and care are virtually wasted. To those, therefore, who value their time, or have any regard for their pocket, I would again say, buy good sound, well-ripened bulbs from thoroughly respectable seedsmen.

AMATEUR.

Palms in small pots.—Few plants can be kept longer in good health without shifting than Palms. The great point is not to allow them to become dry during the growing time, and to feed them with liquid manure from the moment they come into a root-bound condition. Then the leaves do not turn yellow, but retain the rich, dark hue of perfect health. In a general way Palms are shifted too frequently, and in many instances it would be better to keep them another year in the same pots, at the same time feeding them liberally. The great point is not to let them become stunted from want of food, but to give them weak liquid manure about twice a week from the time they start into growth.—J. CORNHILL.

Freesia seed.—With regard to the sowing and growth of Freesia seed (p. 359), my experience is that there is great uncertainty about it. On June 27, 1883, Dr. Foster sent me fresh seeds of *F. refracta alba* and *F. Leichtlini*. These were sown in shallow pans the same day, placed under glass, and left alone. *F. r. alba* began to bloom at the end of November and kept on blooming through the winter. *F. Leichtlini* came up equally well, and has not shown a bloom yet. I carefully kept the seed of *F. r. alba*, which was sown immediately it was ripe, and it did not begin to vegetate till October. How can this be accounted for? It is now growing strongly, but is not likely to bloom for six months. I agree with "B." that the seedlings are better left alone, as I find the removal of the small bulbs makes them "sulky," and they will not start for months. I can strongly recommend Freesias to your readers; they are very attractive, and I advise their growth from seed. To ensure fertilisation the stigma should be touched with pollen from another flower, or there may be a failure. Sow as soon as ripe and keep the seeds moist.—A. R., *Windermere*.

Cyperus alternifolius from seed.—This useful and popular Madagascar Sedgemoor may be propagated either by division of the crowns, by layering the mature tops, by severing the tops and inserting them in sandy soil in small pots plunged in bottom heat, or by seed sowing. This last method is easiest and best for producing handsome young plants of the green-leaved variety. Seedlings have a marked advantage as regards gracefulness of habit, and they very quickly grow to a serviceable size; old plants seed freely, and one head will produce seed enough for furnishing hundreds of plants. We sow in heat in March pretty thickly, and when the seedlings are about an inch high pot them off in little tufts in small pots filled with light, rich soil; each tuft will contain perhaps a dozen plants, which rapidly grow into well-furnished potfuls of elegant greenery—far prettier than the stiffer kind of growth resulting from other modes of increasing this plant. Besides its general value as a decorative plant, this *Cyperus* is a very enduring and also a favourite plant for growing in rooms. It will bear vicissitudes of temperature, confinement, gas, and smoke as well as any green-leaved plant with which I am acquainted, except *Ficus elastica*, while its semi-aquatic nature renders it safe as regards excess of water—the most fertile cause of plant mortality in the hands of amateurs. Another recommendation is the length of time during which this *Cyperus* will remain healthy in the same pot and in pots of small size if its chief need, abundance of water, is attended to; the tops cut off short may be used with excellent effect for dinner-table decoration when the materials are laid on the cloth, and they are also valuable helps

in the way of lasting greenery for mixing with some kinds of cut flowers.—A. MOORE, *Cranmore*.

KITCHEN GARDEN.

MARKET GARDEN NOTES.

MARKET GARDENERS are now busy at work taking up and storing roots, and the ground thus set at liberty is immediately prepared for green crops, or ploughed up roughly in order to expose it to the mellowing influence of the atmosphere. Market garden land gets very little rest; no sooner is one crop cleared off than another is got in as speedily as possible, and by means of liberal manuring the land is kept in good condition. It is a mistake to suppose that soil is worn out by a rapid rotation of crops, for it would be impossible to find more luxuriant crops than those produced by those who grow for market. The extra drain on the land is made up by abundant supplies of manure and thorough pulverisation by means of deep cultivation. Breaking up the subsoil so as to get a great depth of friable material is also a great point as regards good vegetable culture. Amongst crops that at present claim attention I may mention

ASPARAGUS. Beds of this are now being dressed for winter; the tops being quite matured are cut off just above the ground, and the ripe seed is gathered from them; they then make good covering for salad material or any kind of tender vegetables, such as young Cauliflower plants, as they break the cutting winds and admit light and air. All weeds are then removed from the surface, and a good dressing of manure or seaweed is applied to it, and also a little soil from the alleys between the beds—just enough to cover the manure, but not enough to injure the roots, as was the custom in bygone days. In fact, beds and alleys are now made nearly on a level, the alleys being required for gathering the crop and for providing extra rooting ground for the Asparagus.

GLOBE ARTICHOKEs are now having a little protection applied to their crowns; some rather littery manure is packed round each clump, and in spring when all danger of sharp frost is over it is forked in between the rows of plants.

JERUSALEM ARTICHOKEs are being lifted for market; they keep best in the soil, and if the land is required for other crops, they are lifted just the same as Potatoes and stored in covered pits. When well grown they yield an enormous weight of roots per acre, and do not need very rich soil on which to grow.

BETROOT is being lifted and stored secure from frost. It is pulled up carefully, so as not to injure it, for if the juice escapes, the colour when cooked is impaired. The leaves are only cut off about half their length; if cut off closely, juice escapes which ought to be retained.

BROCCOLI, for spring crops, is being frequently stirred, in order to encourage growth. Owing to the drought it was late in the season before the plants could be got out. The way in which they have grown, however, during the last two months is surprising. On good soil, if the winter proves mild, fine heads will be produced in large quantities; and in open field culture, where the plant gets full exposure to sun and air, the heads are even larger in proportion to the size of the plant than within walled gardens, where the foliage draws up long and weak.

BRUSSELS SPROUTS.—Of these the largest are now being sent to market. The old large leaves are removed in order to let air freely in amongst the stalks. Green fly has been unusually plentiful on all green crops in gardens this autumn, the mild calm weather and absence of heavy rains having favoured its development.

CABBAGE AND COLEWORTS are plentiful and good, and are being marketed in quantity. Nice little Coleworts tied in bunches are a valuable vegetable at all times, and the quicker they grow the better they are in quality. Planting of all kinds of Cabbages is being pushed on rapidly; the soil is manured, ploughed, and rolled, and the plants are inserted in the furrows at distances

apart varying with variety and whether they are intended to grow to full size, or be drawn in a half-grown state for bunching. In this locality the acreage planted with Cabbage during the last month is almost incredible. Red Cabbages are now being marketed in quantity. Being now full grown, they are liable to split if heavy rains set in. Young plants are being put out a yard apart each way.

CAULIFLOWERS are at present represented by that well-known market kind called Veitch's Autumn Giant. It is the very ideal of a market Cauliflower, the heads being very large, firm, and white as snow. Large waggon-loads have been turning in for some weeks past, and by having successional crops this kind keeps the market supplied until the early winter Broccoli, such as Snow's, is fit to cut. Young plantations of Early London Cauliflower are being formed on sheltered borders, or close to hedgerows and sunny banks, or under handlights or cloches, and a reserve of plants is kept in cold frames for planting out in March.

CELERY is now claiming daily attention; early crops are being dug for market, and late ones earthed up for blanching. The red sorts are in greatest favour, being hardier, and when well blanched white as ivory.

CARROTS are being lifted and stored in pits, like Potatoes, or laid in heaps and covered with litter in sheds secure from frost.

ONIONS, consisting of good keeping kinds, such as Bedfordshire Champion and James' Long Keeping, that have been well harvested this year, are spread out in thin layers in cool, dry sheds or lofts, in order to keep them from starting into growth until quite late in spring, when they invariably realise good prices; while at this time of year south-coast towns are glutted with Onions from France and the Channel Islands. As soon, however, as this supply ceases the price goes up. All the year round there is a demand for green Onions for salads, and in order to supply this large quantities of White Spanish and other mild-flavoured kinds are grown rather thickly. The main crop for spring is now growing freely, and the late dry weather has been favourable for getting the beds thoroughly free from weeds.

POTATOES.—The latest kinds are now being lifted and stored in pits—a capital crop. For field crops Magnum Bonum is still the greatest favourite here. The soil being light and well drained, the tubers can safely be left in it much later than where it is of a retentive character. There is scarcely any disease, and Potatoes are again cheap.

PARSNIPS are now being lifted. They are a fine crop, their roots having gone too deep to be affected by the drought. They are decidedly best left in the soil until required for use. The practice of lifting and exposing them to frost to improve their flavour, as practised in some parts, has long since been abandoned here as worse than useless. The old Hollow Crown and The Student are both largely grown as market crops.

SPINACH is a favourite market vegetable at certain periods of the year. It is now in excellent condition. The Round-seeded Summer Spinach is the sort most largely grown. It is sown in rows a foot apart moderately thick, and when fit to cut is cleared off by cutting it close to the ground; it is then placed in hampers and sent to market. The Prickly-seeded Winter Spinach is now growing freely, and is being thinned and surface-stirred, in order to promote growth. Being of a hardy character, this kind is reserved for latest use in winter and spring, and only the largest leaves are gathered as they become fit for use.

SEAKALE is now being lifted for forcing; it is nearly all grown on the one-year system, as practised in the London market gardens, viz, sets made of the roots planted in spring make fine crowns by autumn. These are lifted as required during winter and spring, and forced on a gentle bottom-heat in pits dug out in the fields and filled with hot manure. The crowns are covered with mats to exclude light, and with litter to exclude frost, and retain the bottom-heat. The old plan

of forcing by means of Seakale pots placed over permanent crowns is nearly obsolete in market gardens.

TURNIPS are in excellent condition, and are being sent to market in large quantities; only the white varieties are in demand here. Late-sown crops are being thinned, hoed, and encouraged to make growth. If mild weather prevails, they will continue growing freely and come in well after Christmas; but if severe frost sets in and cuts off tenderer vegetation, the hardy Turnip-tops come in most acceptable, and realise good prices; for this reason late sowings are made as a sort of chance crop, which if not required is fed off by sheep; in any case they repay the trouble.

TOMATOES have been a first-rate crop on walls, boarded fences, and on sunny banks. The green fruit remaining is now being gathered and placed in any warm room or glasshouse to ripen, and by this means a supply is kept up till Christmas.

OTHER CROPS grown in smaller quantities consist of salading of various kinds, such as Lettuces, Endive, Radishes, Mustard and Cress. These are generally grown by market gardeners, who make a speciality of them, and have some accommodation in the way of glass pits and houses for insuring a supply of them during any kind of weather in winter.

HERBS, both in a green and dried condition, are always more or less in request. This has been a grand season for them, and plenty of them dried are now bunched and hung up in dry, airy sheds or lofts ready for use, while Sage, Thyme, and other evergreen herbs are encouraged to make good growth before winter sets in. Parsley is one of the crops that are especially valuable when severe weather occurs. For the winter supply the most sheltered positions are selected, and temporary protection is kept in readiness for covering it up in the event of severe frost.

MARKET GARDENING is not only holding its own as an important rural industry, but in the neighbourhood of large towns is rapidly extending and absorbing much of the farm land. The increasing demand for vegetables and fruits promises to assume proportions never yet dreamed of.

JAMES GROOM.

Gosport, Hants.

ANIMAL MANURES IN GARDENS.

"X. Y." (p. 376) declaims strongly against the use of animal manures in gardens, but acknowledges that he uses leaves, ashes, kitchen refuse, lime, &c., and with plenty of these materials there can be no question that good vegetables may be grown. But it is altogether a different affair to argue that soil of any kind will remain fertile if we continue to take crops out of it and return little or nothing to make good the loss. It is against Nature's plan entirely. "X. Y." says his Seakale is covered with ashes, his Peas get plenty of lime, and his other crops get refuse of all kinds; therefore he manures nearly as much as I do, for I mix up all these substances together, and find no difficulty in keeping the soil in good condition with dressings of this kind when we can get enough of them; but as we cannot, we are compelled to fall back on animal or artificial manures of some kind. "X. Y." says truly that his system would not do for market growers; they soon find out that only first-class produce pays the cultivator. Half-starved vegetables, fruits or plants are left on hand while those grown to perfection sell readily, and one never hears complaints as to flavour in the case of any crops grown quickly. Give them plenty of soluble food and no check of any kind, and the flavour will be all that can be desired. We had a good illustration of this during the late summer, when drought prevailed for several weeks in succession, and the soil was so dry that crops were practically starved to death often for want of soluble food, even in rich soil. The result of want of moisture was that Cabbages and similar crops were hard and stringy, and no amount of boiling would make them tender. It is a mistake to suppose that gardeners, either in private places or those who grow for

market, use manure for crops that do not require it; it is an expensive commodity, and the profit and loss account is calculated to a nicety. No gardener would think of manuring his Carrot crop, or Beetroot, or Tomatoes; they do best without it; but to attempt to grow Celery, Mushrooms, Cucumbers, and many other crops in poverty-stricken soil would be a waste of time and labour; and as to Strawberries and Raspberries, it is useless to expect a crop without a liberal use of manure. Of course much depends on what is required. If the owner of a garden is content with meagre results, all well and good; but if "X. Y." wants to be assured that the use of manure is a necessity, let him enter a prize competition with those who do use it, and note the result. In order to make the soil yield crops to its utmost capacity, animal manures must be used. In the case of indoor plants he says only good earth and peat soil are employed—no obnoxious manure; but good earth, means new top spit soil full of stored-up manure, and peat or decayed vegetable fibre is the best form of plant food that can be devised; in fact, "X. Y." treats his crops pretty much as other people do, although the substances used are different. He gives them what may be called moderately good living, and gets fairly good results. But we cannot get away from the manuring question if we would, and one of the most pressing needs of our day is a more perfect mode of utilising manures that at present go to pollute our rivers, or are carried wholesale to the sea, while we are spending millions of money in ransacking the globe for guano.

Hants.

J. G.

Raised beds for vegetables.—It is well known that low-lying, damp localities are not so well suited for vegetable culture as those which are naturally well drained, for the simple reason that all kinds of winter greens are liable to perish in hard winters when stagnant moisture lies about their roots. Potatoes, too, invariably come of a better quality where the soil easily casts off superfluous moisture. A method of dealing with wet ground, adopted by Mr. Kirk in Mr. Dobree's garden at Byfleet, is worthy of mention, as it in a great measure neutralises the ill effects above alluded to. This plan consists in dividing it into beds by taking out rather deep alleys at regular intervals, as these serve to drain off superfluous moisture in a time of heavy rains. A cottager here has a piece of very low-lying ground, and having more than once lost all his winter greens in a frosty time he threw it up into beds some 9 feet to 12 feet across, thus providing drainage whilst increasing the depth of the soil. I never saw Strawberries do better than on this bit of ground; some plants set out four years ago have borne abundantly ever since, and are this year individually so large that they could hardly be crammed into a bushel basket. In the case of heavy lands, which suffer more from wet than drought, the advantages gained by adopting the above mentioned plan would be great, as it would admit of their being worked at an earlier period of the year.—J. C. B.

Salads.—The year 1884 will long be remembered as the year of salads. Never before have I supplied so many, and, if I speak the sentiments of salad eaters, never have they been so much enjoyed. It behoves gardeners to take special note in the matter of growing salads. The summer just passed has indeed been a golden one; nevertheless, not just in harmony with salad growing; still, by a little careful thought, we have weathered the storm without one word of complaint. The chief things in a salad are well-blanching Lettuces, and these we have had in abundance by sowing the seed on well-manured land and letting the plants grow until they come to maturity. This, I admit, is an old, but still a capital plan. The roots strike down to find moisture, and so are well protected from the scorching sun, while, unlike the transplanting system, expensive watering is completely done away with. Not one drop of water have I given the whole of my Lettuce crop this year. When sown in the manner I have just de-

scribed, they afford a refreshing shade, *i.e.*, one shades the other. They also stand much longer without running to seed, and so thickly, that "cut and come again" is the order of the day. The variety which I grow for summer use is the white Paris Cos. I may add, however, that fairly good Cabbage Lettuces are to some tastes preferable, and in this class I find nothing suits my purpose better than Tennis Ball. When this variety is dressed for table, it should be divested of all its outer leaves, and nothing but the white heart left. This should be put into the salad bowl whole. When handed round, I find that people much enjoy cutting them on their plates. This little hint I picked up from a thorough connoisseur in these matters. To make salads ornamental we use *Tropæolum* flowers sparingly. Of the several other salad plants we use, the most important are Chives; the very delicate Onion flavour which they possess is much relished. Then comes green Sorrel, with a very small portion of Chervil and Tarragon. These nicely blended and smothered with a well made salad-dressing, is the most enjoyable thing one can possibly have. I may add that a few slices of Beet-root not only improve a salad, but add to its beauty.—R. GILBERT, in *Field*.

THE SEASON IN BERKSHIRE.

MY recollection, extending over some thirty summers, cannot recall to remembrance such a lengthened and beautiful summer and autumn as we have had this year. At this moment we have double and single Dahlias and Chrysanthemums flowering side by side; zonal Pelargoniums are also still flowering freely in their summer quarters. Heliotropes and dwarf blue Ageratums still hold their own, and yellow Marguerites are producing as fine flowers as they have done during the season. With regard to autumnal fruits, on October 20 I had a piece of Garibaldi Strawberry netted the second time. The plantation contains ninety plants, seventy-five of which are showing fruits, not plants that have been forced, but plants put out three years ago. From these I picked a nice little dish on October 26, and they are still bearing well flavoured fruit. With regard to vegetables, on October 18 and 25 and November 1 we were able to pick good dishes of Sutton's Latest of All and British Queen Peas, the former of which well deserves its name, for it is still producing pods plentifully. And, again, who shall describe the beauty of the autumnal tints of the trees and shrubs, the crimson and ruby and gold of various shades of the English, Norway, and Japanese Maples, the orange, ruby, and bronze of the Sumachs, the scarlet, yellow, and bronze of the Champion Oaks, the ruby leaves and scarlet berries of the *Mespilus canadensis*, the golden leaves of the Tulip trees, the bronzy leaves of the Guelder Rose, or the ruddy glow of *Cotoneaster Simonsi*? A lovely picture has been an Elizabethan window facing westward, draped on either side with *Ampelopsis Veitchi*, clinging to the smooth-surfaced terra-cotta which showed itself here and there through the mass of glistening ruby and purple—truly "a thing of beauty." Even the humble denizens of our native woods and hedgerows, under the benign influence and long-continued summer-like weather, the Spindle tree (*Euonymus europæus*), have assumed a ruddy crimson colour. The lowly Bramble, too, in many cases put on a dress of scarlet and gold, the Mountain Ash a ruddy brown and gold, the Beech many shades of brown and bronze and gold, the Elm pale gold and green, and last of all we have the Oak, type of strength and rugged beauty, about which there is a soft mellowness that is neither brown, yellow, nor green. Such is our autumn of 1884. R. MAHER.

Yattendon, Newbury.

New Zealand Flaxes.—Is it not possible for some of our manufacturers to turn to use native grown New Zealand Flax? In the Scilly Islands, where tons and tons of it can be cut annually, it is of no use except for protection from wind and for ornamentation. Mr. Vallance told me that

he once did send some to Manchester or somewhere, but that no means existed there to extract the gum. It will grow in very poor land and might become, if we had proper machinery, a paying crop. In the Tresco Abbey gardens great and very effective use is made of the variegated forms, both *Phormium variegatum* and *P. Veitchi*; and there are also quantities of *P. atro-purpureum* and *Colensoi*.—C. A. M. C.

GARDEN FLORA.

PLATE 466.

THE ROCK ROSES.

(*HELIANTHEMUMS*.)

PROBABLY there are few natural orders which can boast of so large a proportion of thoroughly desirable garden plants as *Cistineæ*, of which *Cistus* and *Helianthemum* are the two most important genera. A glance through the pages of Sweet* will be sufficient to prove to anyone unacquainted with the subject the great beauty of the vast majority there figured. Those who are familiar with the general run of outdoor subjects could not fail to be surprised on finding that so many of the species cultivated in 1825-1830 (the period of the publication of the work, the title of which is quoted below) are no longer to be met with in British gardens. Sweet gives illustrations of no fewer than seventy to which he accords specific rank, and Loudon in his "Arboretum et Fruticetum Britannicum" describes ninety-nine. In Nyman's "Conspectus Floræ Europæ" fifty-nine species are given, whilst according to the "Genera Plantarum" the total number from all parts of the world is about thirty. The head-quarters of the genus is the Mediterranean region; a few occur from the Levant to the Punjab, some half-dozen hail from North and Central America, three from South America, and a few are found all over Europe and the Canary Islands. As some *Helianthemums* are frequently met with in garden and other literature under the name of *Cistus*, it may be as well to briefly indicate here the principal distinctive characters of the two. In *Cistus* the placenta are five in number (rarely three), and the valves of the seed vessel number five also; the embryo is circinate or spiral, the flowers solitary or cymose, rarely racemed. This genus is entirely confined to the Old World. In *Helianthemum*, on the other hand, the placenta and valves are three in number; the embryo is folded, hooked, or circumflex, and the flowers are frequently racemed. As before stated, true *Helianthemums* are found in both hemispheres. The leaves are simple and mostly entire, the lower usually opposite and the upper alternate. The flowers of some species are dimorphic, the earlier ones being large with numerous stamens and many-seeded pods, whilst those produced later in the season are much smaller in size (the petals being sometimes altogether absent), the stamens much less numerous, and the seed-pods smaller with fewer seeds. The flowers open only once, and cast their petals before the next day; they are produced in such profusion, however, that few plants make a brighter display during their flowering season, which in some species is a somewhat prolonged one.

The cultural requirements of all are of the simplest. *H. vulgare* and the numerous garden varieties

* *Cistineæ*—the natural order of *Cistus*, or Rock Roses. Illustrated by coloured figures and descriptions of all the distinct species and the most prominent varieties that could be at present procured in the gardens of Great Britain.

of that species will succeed almost in any soil or situation; the more exclusively southern kinds should have a thoroughly well-drained position in the shrubby border or rockery. These latter, it is safe to assert, suffer much more from the excessive moisture than from the severity of English winters. In any case a pot of cuttings could be placed in a cold frame each autumn, in order to replace the parent plants should they succumb. The annual kinds—and there are many well worthy of a place in any sunny portion of the garden—do best if sown in pots under glass in spring and planted out when 2 inches or 3 inches high.

As it would require too much space to include all the species, only the more showy ones are mentioned in this article. Probably some of these are not now in cultivation, but it is to be hoped that not a few will be re-introduced now that attention has been called to them. Nothing could be easier than for summer visitors to Spain, Portugal, North Africa, and the Mediterranean region generally to collect and send home seeds of some of these beautiful plants.

For convenience of reference the *Helianthemums* here described are arranged in alphabetical order.

H. CANADENSE.—Michaux, "Flora boreali-americana," i. 308; Dunal, in De Candolle's "Prodromus," i. 269; Sweet, "Cistineæ," t. 21; Gray, "Manual of the Botany of the Northern United States," p. 80.

This is a perennial herbaceous plant with several erect or ascending purplish brown hairy stems, simple below and branched above, springing from the same root. They attain a height of a foot or more, and produce a large number of beautiful clear yellow flowers an inch or so in diameter; these are solitary, the small apetalous flowers being borne in nearly sessile clusters in the axils of the leaves. It is found in sandy or gravelly dry soil from Maine to Wisconsin and southward. The flowering season lasts from June to August. The name, Frostweed—under which it is generally known in its native habitats—is, according to Dr. Asa Gray's "Manual of the Botany of the Northern United States," owing to the fact that late in autumn crystals of ice shoot from the cracked bark at the root.

H. CAROLINIANUM.—Michaux, "Flora boreali-americana," i. 307; Dunal in De Candolle's "Prodromus," i. 269; Sweet, "Cistineæ," t. 99.

Cistus carolinianus.—Walter, "Flora Caroliniana," 152. Like the last, this is a herbaceous perennial with large pale yellow flowers. Several erect, very hairy stems spring from the somewhat creeping root and attain a height of from 6 inches to 1 foot. These mostly die back in winter for the greater part of their length, and are replaced by fresh growths the following spring. The branches are slender, very hairy, when young clothed with a hoary tomentum more or less tinged with purple. The leaves are shortly stalked, hairy, clothed with a whitish tomentum. This species is a native of the Southern United States, and, according to Sweet, requires to be grown in peat. The same authority recommends its being wintered either in a greenhouse or cold frame.

H. FORMOSUM.—Dunal in De Candolle's "Prodromus," i. 286; Sweet, "Cistineæ," t. 50.

Cistus formosus.—Botanical Magazine, t. 264.

Helianthemum formosum.—Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 59, t. 102 a.

This is an erect, much-branched, bushy shrub, with leaves greenish when old, but covered with a whitish tomentum when young, and large bright yellow flowers with a deep purplish brown blotch near the base of each petal. The species thrives well in any rich, dry soil, but is apt to succumb to the cold and wet of English winters. It is, however, such a beautiful plant, that it is well worth the trouble of putting in a pot of cuttings each autumn in a cold frame and planting these out in the open the following spring. It is one of the



largest flowered species, and one of the most distinct and handsome of all the Sun Roses. If raised from seeds, which in ordinary seasons ripen in abundance, a considerable range of variation in the depth of the yellow colour and in the size and intensity of the purplish blotch is obtained. Seedlings also vary a good deal in foliage characters, so that any especially desirable variety should always be increased by cuttings, which root readily if made of half-ripened wood and inserted in a shaded cool frame in autumn. The coloured plate published herewith and drawn from a specimen from Miss Jekyll's garden, represents a fine garden form of this species.

H. FORMOSUM does not appear to be common in a wild state, but has long been cultivated in Britain; it is a native of Portugal.

H. FUMANA.—Miller, "Gardeners' Dictionary," n. 6; Sweet, "Cistinea," t. 16.

H. cricoides and *H. procumbens*.—Dunal in De Candolle's "Prodromus," i., 274.
Fumana procumbens and *F. Spachi*.—Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 165, t. 163a; p. 166, t. 168b.

This is a pretty little Heath-like plant, with somewhat fleshy linear leaves and yellow flowers. It thrives in a sunny well-drained spot on the rockery and does well in pots in a cold frame. Widely distributed throughout Southern Europe.

H. GLOBULARIFOLIUM.—Persoon; Dunal in De Candolle's "Prodromus," i., 270.

H. Tuberaria.—Botanical Magazine, tab. 4873 (not of Miller).

Tuberaria globulariaefolia.—Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 71, t. 111.

A dwarf perennial with a rosette of long-stalked oval, oval-lanceolate, or spatulate, three-nerved hairy leaves and bracteate flowering stems with large yellow flowers. This is a near ally of the true *H. Tuberaria*, but differs in its long-stalked green leaves, in the citron-yellow, black-spotted flowers borne in denser racemes, and in the violet-coloured filaments. A native of Portugal and North and West Spain.

H. HALIMIFOLIUM.—Willdenow; Sweet, "Cistinea," t. 4.

Halimum lepidotum.—Spach, "Histoire des Végétaux Phanérogames," vi., 56; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 65, t. 107.

The Sea Purslane-leaved Sun Rose is a beautiful evergreen shrub. In a wild state it varies not a little according to the conditions under which it grows, and under cultivation it alters so much as to render it at times difficult to determine. In English gardens it attains a height of 3 feet or 4 feet, is of erect habit, and forms a densely-branched, compact bush, clothed with a short, close, hoary tomentum. It is a native of Central and Southern Spain, and a near ally of the species represented in the accompanying plate, *H. formosum*.

H. LÆVIPES.—Willdenow, "Enumeratio Plantarum," p. 570; Dunal in De Candolle's "Prodromus," i., 275; Sweet, "Cistinea," t. 24.

Cistus lævipes.—Linnaeus, "Species Plantarum," p. 739; Botanical Magazine, t. 1782.

Fumana lævipes.—Spach, "Histoire des Végétaux Phanérogames," vi., p. 14; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 162, t. 166.

A much-branched dwarf shrub with slender rigid branches, Heath-like leaves, and yellow flowers. An elegant little plant for a sunny spot on the rockery or for cultivation in pots for cool greenhouse decoration. It is readily increased either by cuttings or seeds. A native of South-west Europe.

H. LAVANDULEFOLIUM.—De Candolle, "Flora Française," iv., 820; Dunal in De Candolle's "Prodromus," i., 278; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 134, t. 152 b, 153 ab.

The Lavender-leaved Sun Rose is a beautiful dwarf shrub a foot or more in height, with leathery Lavender-like leaves, often glaucous above and stellately-tomentose below, and dense racemes of yellow flowers. In the common form the leaves are linear-lanceolate with revolute margins; in another, var. *syriacum*, they are broader and flat

(not with revolute edges). A native of the Mediterranean region.

H. LEPTOPHYLLUM.—Dunal, in De Candolle's "Prodromus," i., p. 279; Sweet, "Cistinea," t. 20; Willkomm, "Cistinearum orbis veteris descriptio monographica," p. 123, t. 150.

A dwarf shrub about a foot high, with ascending ashy grey branches, linear-oblong, shortly-stalked leaves, dark green above, and clothed beneath with a dense grey tomentum. The flowers are a bright yellow colour. This species is an excellent rockery plant; it is a native of Southern Spain.

H. LIBANOTIS.—Willdenow, "Enumeratio Plantarum," p. 570; Dunal, in De Candolle's "Prodromus," i., 277.

Cistus Libanotis.—Linnaeus, "Species Plantarum," p. 739.

Halimum rosmarinifolium.—Spach, "Histoire des Végétaux Phanérogames," 62; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 55, t. 101.

A charming dwarf shrub, from 6 inches to 2 feet in height, with slender branches clothed with ashy grey bark and deep green Rosemary-like leaves. The yellow flowers are produced in great profusion. This species is confined to the littoral south-west Mediterranean region.

H. OCCIDENTALE.—Nyman, "Conspectus Floræ Europæ," p. 72.

Halimum occidentale.—Willkomm, "Cistinearum orbis veteris descriptio monographica," p. 60, t. 103, 104.

Helianthemum alyssoides.—Ventenat, "Choix des Plantes," t. 20; Dunal, in De Candolle's "Prodromus," i., 267.

H. microphyllum.—Sweet, "Cistinea," t. 96.

H. scabrosum.—Persoon; De Candolle, "Prodromus," i., 268; Sweet, "Cistinea," t. 81.

H. rugosum.—Dunal in De Candolle's "Prodromus," i., 268; not of Sweet.

H. cheiranthoides.—Persoon; Sweet, "Cistinea," t. 107.

A very variable much-branched evergreen shrub; in its more northern habitats and towards the limits of its extension up the mountains, procumbent or diffuse; in the warmer southern regions, an erect bush sometimes 3 feet high. The leaves vary very much in size and colour from deep green to a dull whitish hue, owing in the latter state to the presence of a dense covering of stellate hairs. All the names and figures quoted above represent forms of this somewhat protean species which, in cultivation, sometimes assumes altogether different proportions and aspect from its usual ones in a wild state. The flowers attain double the size of those of wild plants, and they exhibit a range of various shades of yellow, the petals being totally without any dark blotch at the base or conspicuously marked.

H. OCYMOIDES.—Persoon; Dunal in De Candolle's "Prodromus," i., 267; Sweet, "Cistinea," t. 13.

Halimum heterophyllum.—Spach, "Histoire des Végétaux Phanérogames," vi., 62; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 56, t. 102.

Helianthemum algerense.—Dunal in De Candolle's "Prodromus," i., 263; Sweet, "Cistinea," t. 40.

Cistus algarbiensis.—Botanical Magazine, 627.

H. candidum.—Sweet, "Cistinea," t. 25.

H. microphyllum.—Sweet, "Cistinea," t. 93 (not of Dunal).

H. rugosum.—Sweet, "Cistinea," t. 65.

The half-dozen names and figures above quoted represent more or less slightly varying forms of a very variable species. It grows from 1 foot to 3 feet in height, and varies a good deal in the size of the leaves and in the form, size, and intensity of colouring of the dark blotch at the base of each golden yellow petal. In many parts of this country this species and its allies are not safe, except against a dry, warm wall. Grown in pots for corridor or cool conservatory decoration, few plants make more beautiful objects than any of the forms of the Basil-leaved Sun Rose. A native of South-western Europe.

H. PILOSUM.—Persoon; Grenier et Godron, "Flora de la France," i., p. 170; Sweet, "Cistinea," t. 40; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 103, t. 132, 133.

H. lineare.—Persoon; Sweet, "Cistinea," t. 43.

H. racemosum.—Dunal, in De Candolle's "Prodromus," i., 282; Sweet, "Cistinea," t. 82.

This is a beautiful little shrubby plant, a near ally of our native *D. polifolium*, which it resembles in habit. It has slender ascending branches covered when young with a whitish tomentum; the leaves are linear or linear-oblong

with strongly revolute margins. The pure white flowers, about an inch across, are borne in long terminal racemes produced during nearly the whole summer. A native of the western parts of the Mediterranean region.

H. POLIFOLIUM.—Persoon; "Student's Flora of the British Islands," ed. iii., 46; Sweet, "Cistinea," t. 88.

H. pulverulentum.—Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 103, t. 137, 138.

H. calcarum.—Jordan.

H. apenninum.—De Candolle, "Flora Française," iv., 824; Dunal in De Candolle's "Prodromus," i., 282; Sweet, "Cistinea," t. 62.

H. confusum.—Sweet, "Cistinea," t. 91.

A dwarf under shrub with opposite leaves hoary and downy on both surfaces; margins recurved. In habit it resembles our common native Rock Rose, but differs from that in being more shrubby in the leaves, being recurved or even revolute margins, and in the white flowers. A native of Central and Southern Europe and North Africa. The British localities given in the "Student's Flora" are Brean Down, Somerset, and Babbicombe, near Torquay. This species is one of the prettiest of our native plants, and it is needless to say is quite hardy. There is a very beautiful Continental variety of this, *H. roseum* (Sweet, "Cistinea," t. 55), with rosy red flowers.

H. TUBERARIA.—Miller, "Gardeners' Dictionary," No. 10; Dunal in De Candolle's "Prodromus," i., 270; Sweet, "Cistinea," t. 18.

Tuberaria vulgaris.—Willkomm, "Cistinearum orbis veteris descriptio monographica," p. 69, t. 110.

This is a near ally of *H. globulariaefolium*, previously mentioned. From that species it differs in its shortly stalked often silky hoary leaves. It is a charming little perennial, succeeding well in sandy soil in any sunny spot on the rockery. During the summer months it grows freely enough in the ordinary herbaceous border and ripens an abundance of seeds, which should be saved and sown under glass in spring, the excessive moisture of our English winters very often proving fatal to the plants left in the open ground, except in dry well-drained sandy soils. The flowers are a bright light yellow colour, and measure about an inch across. A native of the Western Mediterranean region.

H. UMBELLATUM.—Miller, "Gardeners' Dictionary," No. 5; Dunal, in De Candolle's "Prodromus," i., p. 267; Sweet, "Cistinea," t. 5.

Cistus umbellatus.—Linnaeus, "Species Plantarum," i., 729.

Halimum umbellatum.—Spach, "Histoire des Végétaux Phanérogames," vi., 61; Willkomm, "Cistinearum orbis veteris descriptio monographica iconibus illustrata," p. 52, t. 100.

A dwarf, branching shrub, from 9 inches to 1½ feet in height, with sessile linear-lanceolate or linear-nerved leaves with revolute margins, and numerous white flowers terminating the branches in a kind of umbel. In cultivation several superposed whorls are often produced in the same inflorescence. The leaves are a deep glossy green above and clothed beneath with a dense rusty white tomentum. This a beautiful little shrub, one of the most distinct and desirable of all the Sun Roses. It has a rather wide distribution throughout the Mediterranean region.

H. VULGARE.—Gaertner; Willkomm, "Cistinearum orbis veteris descriptio monographica," p. 112; Hooker, "Student's Flora of the British Islands," ed. iii., p. 46.

The common Rock Rose is the most variable of all the *Helianthemums*, and none have a wider geographical distribution. It is found throughout Europe—even within the Arctic circle—North Africa, and West Asia. A host of varieties have originated in gardens, and the hybrids, natural and artificial, between this species and some of its allies are almost innumerable. Some of the most distinct forms are mentioned here, most of them having been regarded by different authorities as species. The ordinary yellow-flowered type is a common British plant, ascending to about 2000 feet above sea level. It generally affects dry soils, and exhibits a considerable range of differences in the form and size of the leaves and the size of the flowers, these latter varying from three-quarters of an inch to about 1½ inches in diameter.

VAR. NUMMULARIUM.

Helianthemum nummularium.—Miller, "Gardeners' Dictionary," No. 11; Sweet, "Cistineæ," t. 80.

This has the yellow flowers of the type, but differs in the lower leaves being suborbicular, flat, and green on both surfaces.

VAR. BARBATUM.

H. barbatum.—Sweet, "Cistineæ," t. 73.

The distinguishing characteristics of this form are the more erect habit and the elliptic-lanceolate or ovate leaves clothed with long white hairs.

VAR. HYSSOPIFOLIUM.

H. hyssopifolium.—Sweet, "Cistineæ," t. 53, 92.

This variety, of which Sweet figures two forms, one with coppery red and another with saffron-coloured flowers, has linear lanceolate or lanceolate flat leaves, green on both surfaces, the upper one being glossy, and both clothed with long hairs. There is a double-flowered form of the first named, viz., the one with coppery red flowers.

VAR. OVALIFOLIUM.—Willkomm.

H. serpyllifolium.—Sweet, "Cistineæ," t. 61.

In this variety the lower leaves are roundish or oval, glossy green above, and covered with a white tomentum beneath. The margins are more or less revolute, and fringed with rather distant hairs; the flowers are yellow.

VAR. GRANDIFLORUM.—De Cindolle, "Flore Française," iv., 321; Sweet, "Cistineæ," t. 69.

This has large bright straw-coloured flowers and oblong, bluntish leaves, green on both surfaces, and beset with close adpressed hairs.

VAR. MUTABILE.

H. mutabile.—Persoon; Sweet, "Cistineæ," t. 106.

When the flowers of this open at first they are a pale rose colour, yellow at the base; before the petals drop, however, they become almost white.

Royal Gardens, Ken. (GEO. NICHOLSON.)

SEASONABLE WORK.

FLORAL DECORATIONS.

A PRETTY arrangement may be made for the dinner-table without either the aid of epergne or any kind of glass stand whatsoever. Select an appropriate plant for a centre-piece; *Cocos Weddelliana*, *Geonoma gracilis*, *Areca aurea*, or *Chamaedorea glaucifolia* are especially adapted for this purpose, being elegant in growth and graceful in outline. Having fixed on a plant, turn it carefully out of its pot, i.e., if larger than a 3-inch one; then set it in the centre of a soup plate and surround it with sand, covering the latter with Moss. After this has been done, suitable foliage should be selected to form a margin, resting on the table-cloth. The variegated leaves of several kinds of *Begonias* make an excellent change for this purpose in place of Fern fronds or other material. Of the latter, *Davallia Tyermanii* or elegans would make a durable edging. Insert a few fronds of the common Maiden-hair Fern over the Moss, and then some flowers may be dotted over the surface. A good selection could now be made from the various sorts of *Primula sinensis* interspersed with a few spikes of white Roman Hyacinth. These will arrange well together. *Bouvardias* in divers colours would look well, adding a spike or two of scarlet *Salvia*. If larger and bolder flowers are desired, use those of *Eucharis* in conjunction with a few blooms of any coloured *Chrysanthemum*. If flowers are scarce, foliage only will make a beautiful effect arranged as a base, choosing such as that of *Fittonias*, *Peperomias*, or the points of bright-coloured *Coleus*, with the addition of a small growth or two of *Pandanus graminifolius* or a few points of high-coloured *Croton*. For specimen glasses *Chrysanthemums* will now be valuable. Excellent arrangements may also be made with these flowers alone for sideboard decoration; for this latter work long sprays should be used and arranged in a free and easy style, with a backing up of some hardy Fern fronds if at hand. Now that the leaves of many late Grapes possess such beautiful tints, they should be made use of for the dessert from this time onwards till the Vines ripen and drop

their foliage. A few stray blooms of climbing *Roses* may still be found here and there, and clusters of these make a good change for the drawing-room. Blooms of Indian *Crocuses* (*Pleioneas*) look well in a flat glass dish in a little Moss and water. Flowers of Tree *Carnations* also look well arranged (a few only) in a specimen glass with their own foliage.

FLOWER GARDEN.

THE planting of all kinds of deciduous trees and shrubs should now be pushed on with despatch, as the earlier these are got in after the fall of the leaf the less check they receive in their removal, and the better they will succeed, for with open weather roots are formed at a great rate, and plants under such circumstances quickly become re-established. For flowering subjects, such as double *Cherries*, *Almonds*, all kinds of *Crataegus* and *Pyrus*, poor soil is the most suitable, as in it they make less growth and more blossom buds, but for ornamental foliaged plants that one wishes to become larger assistance should be given in the shape of a little fresh earth to enable them to start. The best for this purpose is rich turfy loam, such as may be obtained from the trimmings of paths or roads or any old banks, and, failing this, a good substitute is the soil that has been in use for the borders or under cultivation, which is far more congenial to the roots of plants than such as is dug up from below, which is generally dead and inert. It is a good plan, therefore, when excavating the holes for planting to throw this on one side, and fill first with the surface soil, which, from having been exposed to the atmosphere and aerated, is sweet and wholesome. Leaf-mould, so much in favour with many, is a thing to be avoided, as, unless perfectly free from sticks and thoroughly decomposed, it is almost sure to generate fungus, which is apt to fasten itself on the roots of plants, and prove fatal to their well-being, as it poisons the sap, stops all healthy growth, and is a frequent cause of death and decay. Instead, therefore, of using leafy matter as a stimulant, it will be much better to give each tree or plant a mulching of half-rotten manure, which, lying on the surface, acts beneficially in a variety of ways, as its juices are washed down, and it keeps the ground below uniform as to moisture, and prevents any injury from frost.

In planting trees and shrubs, one of the most important points to attend to is the spreading out and regulating the roots, and another to see that the plants are not buried too deeply, as when the collars are lower than is needful, they rarely succeed satisfactorily. To keep the heads from swaying about, suitable stakes and ties should be used, and the soil made firm about the roots by treading. Many are of opinion that American shrubs, such as *Rhododendrons* and *Azaleas*, will not grow in anything but peat, which is a great mistake, as they succeed almost equally well in a sharp, gritty loam, but what they do object to is chalk or calcareous matter of any kind, which is fatal to their existence. If peat can be got to give them a start all the better, but if not, sharp turfy trimmings from the roadside answer well and will grow them to perfection, especially if mixed with rotten leaves, which are a good substitute for peat. Grit or sand is essential, and should be thoroughly mixed with the soil before planting, and in carrying out this latter operation it is necessary to make the soil very firm, as otherwise the fine hair-like roots of the plants cannot get hold, and they perish from drought.

Not only is this a good time to carry out the planting of all kinds of deciduous things, but it is the best season for taking up and relaying turf and making any alterations in beds involving the removal of Box, in edgings of which gaps should at once be made good and walks re-formed where defective and otherwise put in order for the winter. The great point in having firm, sound walks is to get rid of surface water, for if this soaks in or lies on gravel, the latter is sure to be loose, however good and binding its nature may be. To get rid of it properly the walks should be provided with drains and gratings to carry it off

quickly, as the more wash there is the brighter and cleaner will the gravel be kept. That the gratings may be as inconspicuous as possible, it is necessary to have them small, and the best for setting and the neatest are those cast in iron frames, which, placed close along the edge of the walk, are scarcely seen. Under the gratings small traps or receptacles to catch the silt should be formed so as to prevent the drains being blocked by the sand and rubbish carried in by the water. In the formation of walks, next to efficient drains the most important thing is the foundation, which to stand wear should be solid, for if the bottom of a path shifts the top will be disagreeable to walk on. Brick-bats and rough material of that kind are suitable, as the angular sides are favourable as a key for gravel to bind on, but the interstices among the bats should be filled, for which purpose there is nothing better than fine chalk, which, after it gets wetted a few times, binds almost as hard as a rock, and therefore keeps down worms, which where it is not used throw up their castings and sadly disfigure the surface.

INDOOR PLANTS.

WITH a good stock of well-grown *Chrysanthemums* there should now be no scarcity of flowers in conservatories or greenhouses, but where there is not a considerable extent of glass structures, in the endeavour to make an effective display it often happens that the plants are so much crowded together that they do serious injury to the more permanent occupants of the house; for although plants of most kinds will bear standing closer together in the winter, when little growth is being made, than they will in the spring and summer, still over-crowding is always injurious, not alone on account of the mischief it does to the foliage, but also through the liability that exists of plants getting overlooked in the attention they require in watering and other matters when standing so close together as not to be easily got at. For this reason it is better at this season, when the houses devoted to plants are the most crowded, to keep as much of the successional stock as can be accommodated in any pits or empty vineries available. So located, until such things as *Chrysanthemums* and *Salvias* are over and all but enough of them to propagate from can be dispensed with, the general collection will be found in better condition than when indiscriminately crowded together.

HARD-WOODED PLANTS.—Whatever training and tying has to be done should now be got on with without delay, so that the work may be got out of hand before the time comes for other matters requiring attention. Few operations better exemplify the taste and judgment of the operator than tying plants, for, whatever use they are required, one individual will succeed in giving just the support needed to keep them in shape and to prevent their having a straggling, unnatural appearance, whilst another will only manage to show what to avoid by using ten times the sticks and ties that are necessary, the result being that the support that should have been as far as possible concealed becomes the most prominent feature. So far as the altered circumstances under cultivation will allow, the form which each species of plant assumes when growing naturally should be preserved, merely giving the support which the lengthened, weaker growth resulting from culture under glass requires. There is another important matter connected with plant tying which cannot be too often urged upon young hands at the work. The roots of a plant confined within a pot are packed together thickly to an extent that would not take place if it was growing where its roots had full scope to extend, and it follows that every stick which is thrust into the soil must necessarily break a number of fibres and so far injure the most vital part of the plant. This obviously points to the desirability of not using more sticks than can be avoided, and also of not pushing them deeper into the soil than can be helped. In the case of plants that have attained considerable size, and that merely require the old sticks replacing, if care

is taken to put the new ones in the old holes, no root injury will follow.

PRIMULAS.—The early sown plants will now be well in flower. There has been so much improvement in the single strains of these plants, that out of a package of seed there are hardly any bad ones, but it frequently happens that a few will be found so much superior as to be worth retaining for seed purposes. These should at once have all the flowers pinched out, as it is much too soon for them to set freely, and if left to go on blooming, the plants will be so weakened as to yield few seeds. Where possible, they should be kept where they can have a night temperature of from 40° to 45°, and be stood as near the glass as can be. So situated, they will be benefited by the application of manure water once a fortnight.

ARUM LILIES.—There are few plants so appropriate for using in entrance halls and rooms as what is called the Arum Lily (*Richardia athiopica*). Intermixed with suitable foliage, its flowers are unequalled for large vases. It is doubly valuable when in flower early, and where wanted at Christmas or soon after, the plants should at once be put in a brisk heat. For this early work nothing but the strongest examples ought to be used, and such as have been grown through the summer in pots, for though those that are turned out in the open ground during summer are more compact in their foliage and have a nicer appearance, they will not force quite so early as the stock that has been kept in pots. This *Richardia* is very subject to green fly, which increases fast upon it, and quickly spoils its white flowers; consequently before putting the plants in heat it is needful to take care that there is no trace of this insect; if any are found, fumigate well once or twice, or, what will be much more effectual in killing both the insects and their eggs, give a good washing with Tobacco or strong Quassia water.

LILY OF THE VALLEY AND HOTEIA JAPONICA.—No time should now be lost in potting all that will be required of these useful winter forcing plants. Such portion of the stock as is wanted to come in early may at once be put in heat. The Lily will bear a higher temperature than it is advisable to subject the Hoteia to; a brisk bottom heat with the crowns well covered from the light will quickly bring up the flower-spikes, and this plant when not taken out of the ground until time has elapsed to allow of its foliage dying off naturally will bear harder forcing than if taken up too soon with a view to have it in bloom very early. The failures sometimes experienced with Lily of the Valley when it refuses to move at all, however much heat is given it, are not unfrequently traceable to their being lifted from the ground before the leaves were properly ripened off. The Hoteia if wanted early must nevertheless not yet be kept too warm, or the flowers will be few and thin in appearance.

FRUIT.

VINES.—When the leaves are off the Vines, steady attention to cleanliness, gentle warmth, and ventilation will carry all the late keeping kinds on to Christmas, when they may be cut, bottled, and the Vines pruned and rested. If not already done, the internal borders in the Lady Downes house may be well covered with loose, dry Bracken for the twofold purpose of keeping down dust and absorbing moisture. Outside borders may also be covered with shutters, to throw off cold rain and snow, from the time the leaves fall until the Grapes are cut, when exposure will again be preferable to getting the roots too dry. Where late Muscats are wanted to keep as long as possible the houses will require very careful management during the fall of the leaf. Let the temperature decline to 50° in mild weather, and give no more fire heat than is requisite to the maintenance of a dry, cool atmosphere and safety from frost. Remove all plants and evaporating pans, cover the floor with Fern, and dry out or cover up water-cisterns to prevent the absorption of moisture by the atmosphere, which must now be dry and buoyant. As thoroughly

ripened Muscats are easily caught by the sun, it is a good plan to strain a piece of Nottingham netting or thin canvas across the roof of modern houses to protect the shoulders, and to secure an equable temperature through the night. If any late Hamburgs are still hanging on the Vines in houses which were retarded in the spring, they will now keep better in the Lady Downes house or Grape room, and in order to thoroughly ripen up the wood the house may be subjected to a period of sharp dry firing with plenty of air on fine days.

EARLY VINERIES from which the first crop of fruit is to be gathered in May may be closed at once. If fermenting material is applied to the internal borders, a temperature ranging from 45° to 55° may be maintained without the aid of much fire heat, but in the event of the weather becoming very cold the pipes must be warmed every morning, and the swelling of the buds aided by frequent syringing with warm water. The best material for producing gentle warmth is fresh Oak leaves and short stable manure, thoroughly worked and fermented before it is taken into the house. The outside borders, hitherto exposed to the elements, may be protected with litter or shutters, but no artificial warmth must be applied to them until the buds begin to swell. After the house has been closed for a week or two the temperature may range about 55° with a rise of 5° to 10° on sunny days. Examine the borders, and if the repeated waterings, little and often, previously recommended, have not thoroughly penetrated to and through the drainage, give a thorough soaking with water at a temperature of 90° and cover up immediately with the fermenting material. If the Vines are young they may be slung in a horizontal position, as more time and attention will be needed to secure an even break, while old ones will break equally well if tied up to the wires as soon as they are pruned and dressed and exposed to a few degrees more heat by day; but in all cases from the beginning to the end a low or resting night temperature will be found one of the main features of success in the cultivation of Grapes.

LATE HOUSES in which Grapes are hanging will now require careful management to prevent the fruit from shrivelling under too much fire heat and damping through the want of it. Thin-skinned kinds like the Hamburg will keep best off the Vines in a well-ventilated Grape room from which the light is excluded. Muscats now quite ripe may have just sufficient fire heat to expel damp and to maintain a temperature of 50° to 55° at night. See that the surface roots have sufficient moisture to prevent the berries from shrivelling, and cover the inside borders with dry Fern to check evaporation from the soil and to prevent dust from rising and settling on the berries. In modern houses composed almost entirely of glass, ripe Muscats are liable to change colour and sometimes scald after this season; and as this defect greatly depreciates their value, a few breadths of canvas strained across the roof, while preserving the delicate amber colour of the berries, will prevent fluctuations of temperature and reduce the necessity for applying fire heat. Where Lady Downes and other black kinds remain unfinished, fire heat with plenty of air will still be needed. If heavily cropped, and perfect colour is doubtful, a nice surface watering with tepid liquid on a fine morning will help them, but no time must be lost in applying it, as the foliage will soon be ripe and falling from the Vines.

ORCHARD HOUSE.—We have recently removed all the trees that were repotted from the orchard house to a sheltered situation out of doors, and others which had not become pot-bound have been top-dressed and placed with them, where they will remain until the winter occupants are taken out in the spring. Birds being destructive when the buds begin to swell, we are obliged to net the whole block, and dry Fern is used for protecting the roots from frost and drought. For some years we have grown trained standard and half-standard Peaches and Nectarines in pots and tubs upon a trellis 16 inches from the

roof, where the roots being confined and highly fed, we obtain very heavy crops of fruit greatly superior to that obtained from bushes and pyramids—so much so, that we have no hesitation in recommending the system to amateurs and others who wish to grow the cream of the cream, fit to eat or exhibit, at a tithe of the expense of an ordinary orchard house. Trees intended for potting should be secured without delay. Meantime have a good supply of dry compost mixed, and clean, dry pots crocked ready for use, as the delicate roots of a tree should never become dry, as is too often the case when brought from a distant nursery. To obviate this difficulty and to economise time, a few maidens should be bought in every year and planted or potted and plunged in a dry, warm border in the garden, where they can be mulched, pinched, and manufactured into perfect pyramids, ready for filling up blanks as they occur. Pears, Plums, Cherries, and Apricots lifted, root-shortened, and replanted in new loam every year soon make handsome fruit-bearing trees; but unless the climate is very good, Peaches and Nectarines do best under glass.

PEACHES.—To have May Peaches, the house should be ready for closing by the end of this month. If the roots of the trees have the range of internal and external borders, it will be necessary to see that the soil is in a nice growing state quite down to the drainage, while those running outwards will require some kind of covering to protect them from the chilling influence of cold rain and snow. It is not, however, at all imperative that the roots have an external border, as the finest fruit may be grown for a great number of years where the internal space is extremely limited, provided the borders are frequently renovated with fresh maiden loam, top-dressed with good rotted manure, and well fed with a liberal hand throughout the growing season. If the weather is mild no fire-heat will be needed at first, as the trees are easily excited; but a soft, genial atmosphere may be secured by the introduction of fermenting Oak or Beech leaves, to which may be added one-third of fresh stable manure. This will require turning occasionally to liberate moisture, and the trees must be syringed twice a day when fine, care being taken that the second syringing is performed early in the afternoon, as it is not well to have the buds loaded with moisture at nightfall. Let the temperature at the outset range from 40° to 45° at night, and 10° higher by day. Open the top and bottom ventilators when the weather is bright and warm, and the bottom ones only when keen, cutting winds will produce a draught. Continue this treatment until the buds show signs of swelling freely, and the first danger, that of dropping, has been overcome. Then coax them along by warming the pipes every morning to increase the day temperature, and shut off the heat when a night temperature of 45° can be maintained without it.

FIGS.—Assuming that the early pot trees are now in position, and ripe Figs are wanted early in May, the third week in this month will be quite early enough to close the house for forcing. In former papers I have stated that I place my pots on firm pedestals and pack them round with fresh maiden turf before forcing is commenced; but, instead of starting with fire-heat, a good body of fermenting material is introduced, the moist warmth from which soon penetrates the pots and stimulates the trees into action, and by the time the fruit requires assistance the new turf is a mat of roots, capable of absorbing an unlimited quantity of liquid of the best quality. When treated in this way it rarely happens that any of the fruit drops; and all the roots being fresh and active, Figs of the first size and quality may always be secured from the beginning to the end of the season. If the balls have become very dry it will be necessary to give repeated supplies of tepid water to bring the soil into a growing state, and to syringe the stems and shoots two or three times a day. When the house has been closed ten days or a fortnight, and the stimulating moisture from the bed is beginning to tell upon the buds, gentle fire heat must be applied to maintain a

temperature of 50° to 55° at night and 60° to 65° by day, when a little air may be given to sweeten the atmosphere.

HARDY FRUITS.—When the root pruning of pyramids and bushes has been brought to a close, the renovation of older trees should receive immediate attention. In many old gardens we often find trees of large dimensions to which the modern system of root lifting cannot be applied, or if it is attempted, one side only should be operated upon in any one season, and when the strong roots which have to be cut have made new roots into fresh compost the other side may be treated in a similar manner. If the trees are healthy and crop well, and disturbance at the tap root is not considered necessary, the quality of the fruit may be greatly improved by the entire removal of the surface soil quite down to the roots, replacing it with fresh compost consisting of good loam, road scrapings, charred refuse, and rotten manure. Conjointly with these operations the heads of standards may be thinned preparatory to the removal of loose bark and Moss, when all the strongest branches may be washed with a mixture of soot, lime, and stiff loam reduced to the consistency of paint with strong soap water, two pounds to the gallon. Wall-trained trees and espaliers should be unfasted, spur-pruned where the spurs have got too far away from home, washed and dressed in a similar way, and tied up in bundles until the time arrives for nailing or tying in for the season.

PRUNING.—Where much of this work has to be performed advantage should be taken of the mild weather which generally prevails through November for getting this operation well advanced. Commence with Currants, Plums, and Cherries, thin and tie up Raspberries, but defer shortening the tops until the spring. Mulch heavily with rotten manure when the weather is favourable for wheeling, and avoid all digging or disturbance of the surface roots. If new plantations have to be made now is a favourable time for getting in the canes. The Raspberry enjoys a light, rich soil, and produces the finest fruit when grown in single rows running north to south and trained to a V-shaped trellis which admits of the young growths rising up the centre. Unnail Peaches and Nectarines as soon as they are clear of the foliage, and draw them away from the walls to prevent the buds from getting too forward early in spring.

STRAWBERRIES.—If pot Strawberries are still standing out-of-doors care should be taken to prevent them from becoming infested with worms, for, useful as these creatures may be in our fields and pastures, the Darwinian theory is not likely to find favour with the grower of pot Strawberries. Prepare the cold pits intended for their reception by covering the bottom with a thick coat of coal ashes, examine the bottoms of the pots, and plunge to the rims in Oak leaves or old tan. See that the soil is in a nice growing state when they are put away, throw the lights off at all times when the weather is mild, and close them when very wet or unusually severe. If the first batch intended for early forcing has been some time under glass, have them moderately supplied with water, as damage often follows keeping them too dry.

KITCHEN GARDEN.

EARTHING Celery forms at present the greater part of our work. Whenever the weather is dry get it well banked up; a sharp frost coming before the final earthing is most detrimental to its well-being. Continue to lift Carrots, Turnips, and Beet, stacking them outside in small round pits; a cartload in each is plenty; cover up first with dry straw, then put on the soil about 6 inches thick. Our earliest sowing of Peas we make about the middle of the month. We find Laxton's William I. to be a hardy and good standard variety. A good site for Peas is a warm south border; we sow them in drills about 4 feet apart, and if the following advice is adhered to, a good crop will be the result. As soon as the plants show themselves above ground cover them over 1 inch thick with

coal ashes; this wards off their enemy, the slug; and placing four strings of white worsted along the rows elevated about 6 inches above the ground in a great measure keeps off the birds. When the Peas show through the ashes, they should be earthed and rodded immediately. Nothing is so bad for Peas as sharp cutting surface winds in spring, but by adding a few Spruce branches along each side all will be satisfactory. Broad Beans (Old Green Windsor is still one of the best) should also be planted; these brave the winter winds better than Peas; still, if earliness is a consideration, protect them, and they will pay for it.

FORCING VEGETABLES.—We are busily engaged emptying brick pits to be in readiness to fill with leaves for Rhubarb, Seakale, and Asparagus. These vegetables when forced with good sweet leaves are not only tender, but the flavour is much better than when manure is used; in fact, they are not only eatable, but enjoyable. Keep good stocks of French Beans at work; Osborn's variety is a good one. Make up at once beds of manure and leaves for early Potatoes. Start the sets in a mild heat in boxes. Our first Mushroom bed, spawned seven weeks ago, is now in bearing, and the house is kept cool and humid. The second bed will be in plenty of time to succeed the first. Inside Mushroom rooms are poor examples compared with those grown on ridges, where the buttons are as big as Oranges and firm as rocks. Still, we must have them in the dark days of winter. Keep up good supplies of Mustard and Cress, Tarragon, and, above all, Chives, which are always in demand.

WORK DONE IN WEEK ENDING NOV. 11, 1884.

NOVEMBER 5.

FINE mild, drying day; therefore all air possible was given to vineries in which ripe fruit is hanging, every lateral being cut back and decayed leaves removed. All Hamburgs were cut and put in Grape room some time since, and Alnwick Seedling has been housed to-day, as it was beginning to shrivel, which cannot be from lack of water, there being Alicante and Lady Downes in the same house with their berries as plump as anyone could wish. My opinion of Alnwick Seedling has changed, or is changing, as I once thought it would prove a rival to Alicante, but neither in quality nor keeping is it as good as that variety, and its occasional freaks of non-setting will ever cause it to be classed in the doubtful list of Vines, otherwise worthy of cultivation. Up to the present year it has always set well with us, but our best Vine of it was this season a complete failure; whilst two other Vines under exactly similar conditions of culture set their fruit perfectly; and as we cannot afford to have such failures, we mean in future to reduce our stock of this variety to about one Vine, and the first time that this fails we shall doom this Grape to entire exclusion. Gave more space for Chrysanthemums, now in full flower, and requiring abundance of air and light to keep the foliage and flowers good for the longest period. Atmospheric moisture is detrimental to their long keeping, and, therefore, if rainy weather sets in, the ventilators will be kept open and a slight warmth in the pipes to keep the air in motion. Wheeling manure and soil on to vacant plots of ground in kitchen garden, weeding amongst Broccoli and Kale, and trenching were the whole of our outdoor work.

NOVEMBER 6.

Heavy rain nearly all day. Potato stores looked over and bad tubers removed, and all laid as thin on the floors and shelves as space will admit of. The disease has been all but nil this season, and none have been affected with it since they were housed. We grow early kinds principally, and so get them dug and housed before the disease spreads much. The late kinds that we grow most largely are Magnum Bonum and Reading Hero, and these are both of them excellent disease-resisters. Washing pots, scrubbing and washing the woodwork—doors in particular—in the houses, and potting up the remainder of old bedding plants, at least such as have been lifted, for there

are numbers that have not yet been injured by frost, and these will not be removed till they are Tying Peaches, pruning others, and cutting ties preparatory to pruning and painting the trees over with Gishurst as a preventive against the attacks of insects. Washing and sponging Dracænas, Crotons, and Gardenias completed the work of to-day.

NOVEMBER 7.

Again showery, and much the same jobs as yesterday occupied all our hands. Onion stores were overhauled, non-keepers and any that were bruised and not likely to keep long being put aside and marked for immediate use. Apples and Pears, too, were looked over, and Nuts, Filberts, and Cobs freed of the husks. After being thoroughly dried they keep very well on the top shelves of the fruit room; they require an occasional turn over and a rub with a rough dry cloth to prevent their getting mouldy. Cleared out old leaves from pit in early vinery, and which will, the first chance, be again filled with Oak leaves, for the double purpose of producing atmospheric moisture and warmth when forcing begins a week hence. The warmth is also helpful to start forcing shrubs, Spiræas, Deutzias, and Roses. The plants are not plunged, but simply stood on the bed, so that there is no danger of the bottom heat proving injurious. Tying Peaches, stored Dahlia roots in a cool dark shed, packed them as close together as possible, and placed over them a little rough leaf soil, so that they may not get too dry. Fuchsias are being served the same; old plants of these make such excellent bedding plants that we like to save all we can. One of our most admired arrangements this year was tall Fuchsias, with undergrowth of white Viola Mrs. Grey and Agathæa coelestis (blue Marguerite), surrounded with a band of tricolor Pelargonium Sophia Dumaresque and edged with Herniaria glabra.

NOVEMBER 8.

Bright and sunny all day long. Rain and wind of the last two days caused us an unusual amount of outside clearing up and carting of leaves; but besides that we managed to get all the walks rolled and to clear some of the sub-tropical beds, Solanums and Wigandias and other annual species being thrown away. Australian Dracænas, Aralias, Ficuses, and others of that stamp are preserved and will be potted the first opportunity. Indoors, though work was pressing, Saturday's usual clean up had first place. Watered vines and tidied up plunging beds; also watered inside border of intermediate vinery, the Grapes being cut and bottled. Picked the bad foliage from Cinerarias, and gave them more space; they are still in airy frames, and are well protected with mats at night. Other work consisted of sundry little jobs of rearrangement of plants, flowering ones in particular, to show them off to the best advantage, the greater jobs being such as have been on hand for some time past, viz., tying Peaches, painting them with insect solution, and pruning and top-dressing of borders.

NOVEMBER 10.

There has now been sufficient moisture to render transplanting operations comparatively easy, in addition to the greater confidence that such moisture has inspired in us to begin the work, knowing that it will be successful, because the conditions are favourable. Ground having been well trenched, we planted a new clump of Rhododendrons. Our soil is a light loam inclining to peat, and therefore a suitable one for Rhododendrons; but in some parts of the park and grounds the soil is pure loam, yet Rhododendrons and Ghent Azaleas do splendidly, thus showing that peat is not essentially necessary to their growth. Turf cutting for laying down as lawn a piece of ground that was previously an old shrubbery, but which has been destroyed to open out a view, showing the boles of Oaks and Beeches, together with a few specimen Conifers, that before were concealed till close to them. Potted the last Pelargoniums and the remainder of sub-tropicals. Some few single Dahlias are yet in good flower, and Marguerites are quite full of flower, the frost as yet having had no effect on them, and having lifted

all we require for stock, the rest will be left to take their chance, as will also the remainder of the Dahlias. Tied Euphorbia jacquiniiflora to Melon trellis; also tied Cucumbers. The latter look sickly, and must have an increase of bottom-heat. Put a few Strawberries in the forcing pit; they are stood on a bed of leaves, but not plunged. The moisture and warmth arising from the leaves is a wonderful aid to them at this early season, when it is generally difficult to get the crowns to burst evenly, and by no other way have we ever been so successful as by this. Of course later on when the plants have had a longer rest, they will start into growth better without the bottom or moist heat than with it.

NOVEMBER 11.

Turf cutting and laying it down; cleared away old roots and stumps to fire-heap, where they all help to burn up the refuse that other than as ash would be useless, but which in that form is of great service for kitchen garden use especially. Trenching in kitchen garden; this work we find it convenient to do at odd times; as, for instance, when a large job is nearly finished, and a number of hands cannot therefore be employed on it; then it is that part are drafted off to trenching till such times as the work is complete and another large job began. New gravelled plant house, or rather the shelves and bed on which the plants stand. Small pebbles—quarter to half-inch size—always look clean, and admit of the water draining away rapidly, and yet hold moisture sufficient to give off the necessary humidity the plants so much relish, more particularly so in spring and summer. At this season such humidity must be of a restricted nature, which perhaps may be best expressed as neither humid nor arid. Looked over ripe Grapes. We found it necessary during the recent rain to keep the fires gently going and the ventilators slightly open, and even now the degree of humidity in the air necessitates a continuance—in a modified form—of the same treatment; when the atmosphere is clear the ventilators are thrown wide open, but are closed very early to prevent condensation of moisture on the fruit. Indeed, this is why we advocate slight warmth in the pipes at all times, which ensures the internal air being lighter than the outside, and therefore renders condensation of moisture an impossibility. Began to prune Pears on wall; the summer pruning we practise leaves but little to be done at this season other than thinning out spurs by cutting them clean back to the main stems, and shortening others that are getting too far away from the wall, and therefore out of range of protection, not to mention their ugly appearance. HANTS.

laid on it the wet gets into it and rots it in a short time. Many are now using Pitch Pine, for although this costs—owing to its hardness—more to work up, it is so weather-resisting as to need but little care in painting.—J. C. B.

NOTES.

Field flowers.—"What ornament is there, what supply of light or beauty could we discover, at once exquisite and cheap, that should furnish

minds you of the beauties of creation, and gives you a link with the poets and sages that have done it most honour. Put but a Rose, or a Lily, or a Violet on your table, and you and Lord Bacon have a custom in common. . . . Flowers on a morning table bring the breath of Nature into your room; they seem the representations and embodiments of the very smiles of your home, the graces of its good-morrow." Thus writes Leigh Hunt. Indeed, a habit of cultivating cheerful thoughts and surrounding himself by lovely objects conducive to inspire refined and beautiful ideas was a main feature in his daily life.

Green leaves.—His worship of Nature was not confined to bright blossoms—the budding bough and tenderest little leaflets had honour of him—since he goes on to say that "Even a few leaves, if we can get no flowers, are far better than no such ornament—a branch from the next tree, or the next herb market, or some twigs that have been plucked from a flowering hedge. They are often, nay, always, beautiful, particularly in spring, when their green is tenderest. The first new boughs in spring, plucked and put into a water-bottle, have often an effect that may compete with flowers themselves, considering their novelty, and indeed 'leaves would be counted flowers, if earth had none.' For our part, as far as ourself alone is concerned, it seems to us that we would not be mastered by the blackest storm of existence, in the worst pass that our pilgrimage could bring us to, as long as we had shelter over our heads, a table with bread and a cup of tea upon it, and a single one of these green smiles upon the board, to show us that good-natured Nature was alive."

The tidying-up season is now upon us, and old flower-stalks and dead leaves will all be swept up and, perhaps, burned on the rubbish heap all for the sake of neatness. Perhaps dead stalks amid a swirl of sere and yellow leaves are not quite beautiful, but there is no doubt but that Nature's covering during winter is a great protection and help to the plants beneath. But if for neatness sake we do sweep up all natural manure and shelter, we must at least add something stimulating to the soil in place of what we absolutely carry away. Our plan is to wait until the November gales have swept the leaves around the Hollies and other shrubs and then to cover them with a few spadeful of earth. In shrub, and especially in fruit tree, culture there are one or two points worth attention. We must never forget, for example, that occupying, as they do, permanent positions, that principle described as "change of soil" or "rotation of crops" is in their case suspended for many years, and even the na-



Cowslip and Centaury.

5272.—Material for glass structures.—I would strongly urge "Enquirer" not to use a particle of Scotch Fir in the construction of glass-houses. Years ago, when Mr. Rivers published the first edition of "The Orchard House," a large house was put up in this neighbourhood in which was used unplanned Scotch Fir, which grows abundantly here. The event was disastrous, the rafters in a short time coming inwards, so that the glass became displaced, and in the course of a few years the house had to be pulled down. Scotch Fir rapidly decays if much exposed to the weather, and it is also extremely subject to the attacks of an insect resembling a wasp, but smaller, which bores holes in the wood and deposits its eggs, which in due course develop into maggots. The latter eat their way into the solid wood, which in time becomes honeycombed, and ultimately rots or falls to pieces. It does not matter whether the wood is exposed to the weather or not; this insect attacks it all the same even if covered in by a close roof. I recently saw the effect of using Scotch Fir for the rafters of a shed. This shed has not been erected many years, but it must be pulled down on account of the weakening and decay of the rafters caused through the operations of this wood-boring insect. It is cheapest in the end to use the best material in the erection of glasshouses, and every sappy bit of wood should be rejected, as in spite of all the paint that can be

our humble board with a grace, precious in the eyes of the most intelligent among the rich? Flowers. Set flowers on your table, a whole nose-gay if you can get it, or but two or three, or a single flower, a Rose, a Pink, nay, a Daisy. Bring a few Daisies and Buttercups from your last field-walk, and keep them alive in a little water; aye, preserve but a branch of Clover, or a handful of flowering Grass—one of the most elegant as well as cheap of Nature's productions—and you have something on your table that re-

tural mulch or covering of dead leaves which Nature gives in autumn is raked or brushed away from them for the sake of neatness. These are reasons why hardy plants, and fruit trees especially, should be well manured at least once every year with leaf-mould or well-rotted manure.

Chrysanthemums.—"Now is the winter of our discontent made glorious summer" by the many hues of fringed and tasselled and quilled Chrysanthemums. Not only are our own gardens, private as well as public, gay with them, but they

are equally popular in America. In the West, Dr. Walcott, Mr. Thorpe, and others are now adding much to the variety of this now popular flower by raising seedlings, some of which are quite different from any of those known in Europe. All who are interested in our winter queen should see the beautiful sketches in *Harper's Magazine* for November, in which Mr. W. H. Gibson has given us some idea of the variety and grace of these American kinds. His sketches illustrate a paper by Mr. John Thorpe, and it is quite evident that the trammels of the florist are far less regarded in the West than here with us. The twisted fringe and quill of the Japan varieties, however, are welcome here, and even single or Daisy-blossomed kinds are tolerated to-day, although banished for years from our gardens.

Imperial Kew.—Mr. Joseph Hatton contributes an interesting paper to the current number of *Harper's Magazine*, entitled "A Day with Sir Joseph Hooker at Kew." It is, moreover, illustrated by some of Alfred Parsons' lovely little sketches on wood, representing glimpses of the Green near the little churchyard sacred to the bones of Gainsborough, the Queen's Cottage in the private grounds, and some characteristic scenes in the Orchard and Palm houses, as also a view of the big Water Lily (*Victoria regia*). A view of the lake in the arboretum is especially charming, and there is a good portrait of Sir Joseph Hooker himself and a truthful sketch of his study. Mr. Hatton tells us that the little park around the Queen's Cottage is a real wild garden. "One day in the spring I walked over it, and it was a little world of Bluebells; the wild Hyacinths literally covered every yard of ground. The great trees grew up as they were out of them, hiding the sky and keeping down the perfume which every breeze seemed to stir into a delicious activity." Again we are told that the director's special work just now at Kew is finding out what is desirable for a colony, and then providing it; indeed, Sir Joseph never seemed more pleased than when discoursing upon the benefits that accrue from the propagation and cultivation of economic plants.

Harvest festivals.—"Every church has been gay with harvest festival decorations, and this year it seems as if people had come to their senses in the matter, and while taking care that the harvest itself is well represented, have not produced that appearance of a horticultural show which was so usual when harvest festivals were first organised. Perhaps one of the very prettiest effects was produced by a bordering of dark Box, with tiny bouquets of Corn and scarlet berries from the hedge Iris, arranged alternately. These berries are most valuable for all church work, and should be gathered now and preserved for the swiftly coming Christmas festivities. Mountain Ash berries are also most valuable, and their colour can be kept as fresh as possible by either sealing the stalk of each bunch, or else dipping the berries into spirits of wine. If Holly berries are scarce, they look exactly like them at a distance, although they are really a much yellower shade of red. Artificial berries are out of place in church work, and a little foresight in autumn would always render them quite unnecessary." A friend of mine has this year used the long wreaths of Black Briony (*Tamus*) berries with excellent effect in harvest festivities, together with the silvery pods of the common Honesty (*Lunaria*), the glowing Chinese lantern-like fruits of the Winter Cherry (*Physalis*), and the ever graceful leaves and flower-stems of the Banshee's Rod or Bulrush (*Typha*), which are most effective contrasted with Pampas plumes.

The Blue Gum.—"What kinds of seeds are most asked for by your correspondents at the present time?" was the question put to Sir Joseph Hooker some time ago. "The Eucalyptus," was the reply, "and we have good reports of it from Assouan, Bengal, Bombay, Jamaica, Saharunpore, Singapore, Zanzibar, and other places." "While the Eucalyptus, or Australian Blue Gum tree, destroys malaria and keeps off mosquitoes in marshy soil, it has no such effect on dry soil. The difference is ascribed by a German scientist to the fact that

the tree is constructed to act as an evaporating machine, and so does its work best in marshy land. A feature of the tree is its adaptability to different climates, it being now grown in almost every civilised country where frosts do not occur." In a word, the beneficial influence of this quick-growing tree would seem to be mechanical rather than medicinal. Its action is that of a powerful natural pump, extracting moisture from the earth by its far-reaching roots, then distilling it, and throwing off the surplus by respiration. In cold countries Poplars serve the same purpose, and a crop of Sunflowers would in this way do as much perhaps as the Blue Gum in warding off malaria.

Mangoes.—What the finest of Peaches or Pears are in Europe, the Mango may be said to be in those tropical countries where it will thrive, and if Mr. Maries (see p. 372) follows up his idea and produces a good monograph of this delicious tropical fruit, he will do good service, and gain the thanks of many Europeans and Orientals alike. No written description could do justice to such a deliciously variable fruit as the Mango undoubtedly is when eaten fresh from the tree. The seedling varieties are innumerable, but the best are carefully perpetuated by grafting. As with Pears, so with Mangoes. Some are rich, some piquant, others overflow with delicate juice, while there are some with melting flesh of quite a buttery nature, and an exquisite flavour too subtle for words. The tree itself is beautiful—something like a large-leaved Portugal Laurel. Near the Equator two crops are produced every year, and the young growth of the tree is of a bright red tint, quite ornamental. Now and then you may get Mangoes in Covent Garden, but they are generally of the "tow and turpentine" order, or second rate at the best.

A new Daffodil book is promised us by Mr. Barr, and, judging from the proof-sheets which we have seen, it will prove of considerable service and interest to all lovers of the Narcissus. Its main value as a work of reference consists in a complete list of some 450 varieties of these charming spring flowers, and it is illustrated with two portraits of John Parkinson, who was in 1629 the original monographer of the genus. Mr. Barr's list of species and varieties includes all those known or grown in English gardens for a period of at least three centuries. The work will consist of forty-four pages, and being similar in form and size to Burbidge's "Narcissus," it may be bound up with that work as a useful appendix. Verily Mr. Barr is the champion of the Daffodil!

Ipomœa rubro-cœrulea.—This is one of the most beautiful of all climbing plants for a warm and sunny stove, blooming as it does during the autumn and winter months. Its flowers are large and of the most lovely sky blue colour with a soft white throat. There is also a milk-white variety scarcely less interesting. Our plants of both, now blooming, were raised from Mr. Thompson's seed sown in March last. Like most other tropical Bindweeds, this *Ipomœa* requires plenty of room to display itself and liberal pot culture, or planting out in a bed or border is essential for securing the best results. Our plan is to train the main shoots up strings to the roof of a tall house from whence the lateral growths and terminal flowering-stems hang at their own sweet will.

Cotoneaster frigida is just now one of the most effective of all our berry-bearing trees, and to see its coral clusters of fruit as they stand out against a fleecy sky on a sunny November day is a pretty sight; indeed, it is so distinct and effective, that the wonder is it is so rarely seen in good gardens. C. Simonsi is also very pretty trained on walls with the golden Japanese Jasmine (*J. nudiflorum*) for company, and the Pyracantha is brilliant on some soils. I saw a bush of it the other day on a sunny wall growing amongst golden-leaved Ivy, and the effect was really so cheerful and pleasing, that I shall try the combination for myself; but all these are only shrubs, while the subject of my note, *Cotoneaster frigida*, really forms a good sized tree. VERONICA.

FLOWER GARDEN.

LEEDS' SEEDLING NARCISSI.

SOME time ago I said that the late Mr. Edward Leeds gave us no information as to the origin of his seedling and hybrid Narcissi, but I have recently found out I was mistaken in this, and so now hasten to make reparation. I am indebted to a fair lover of Narcissus for a reference to Ayres and Moore's "Gardener's Magazine of Botany," where in vol. iii, at pp. 169 and 289, we really find not only ample detailed descriptions of six varieties of new seedling Narcissi, but also some interesting information as to how these were originated, as also some most valuable details as to the rearing of seedling Narcissi generally from Mr. Leeds' own pen. It is most interesting to find him acknowledging the writings of his contemporary, the late Dean Herbert, on the same subject, and, as has been before suggested, it seems quite possible that Mr. Leeds was encouraged by the information on the hybridising of Narcissus previously published by the Dean of Manchester and others, even if these writings were not actually the original inducement of his efforts in this direction. It may here be mentioned that hybrid Narcissi raised by Dean Herbert in his garden at Spofforth were figured and described in Lindley's "Botanical Register" for 1843.

As we have said, Ayres and Moore's valuable magazine was published in 1850-51, and it is therein clearly stated that Mr. Leeds had already been engaged in the rearing of Narcissus seedlings and hybrids for many years previously. All this is very pleasant to know now that Mr. Leeds' Narcissi are so abundant in our gardens and so beautiful withal. The following are the descriptions and directions to which I have alluded, but all who are interested should lose no opportunity of seeing the original work and its illustrations for themselves. It only remains for me to say that all these six varieties are now in cultivation. The only figure about which there is any doubt is that purporting to be a portrait of *N. bicolor* var. *maximus* (= *N. grandis*). Is this really the *N. bicolor maximus* of our gardens to-day? If so, then the artist painted a young flower and emphasised the yellowish hue of the perianth segments a little too much. To my mind the figure is more suggestive of *N. b. primulinus* (= *N. Dean Herbert*), or perhaps *N. b. sulphureus* (= *N. Michael Foster*), seeing that the perianth segments are yellow and not milk white, as they are in the true *N. b. maximus* of our gardens to-day.

Having said this much by way of introduction, I must let the following transcripts tell their own tale:—

In the "Gardener's Magazine of Botany" for the year 1851, page 169, three varieties of seedling Narcissi are figured on a lithographed plate, C. T. Rosenberg being the artist. These three varieties are described as follows:—

No 1. *N. POCULIFORMIS ELEGANS*.—Flowers large; segments of the perianth more than twice the length of the cup, somewhat undulated, creamy white, cup cyathiform, with a crenulate nankin-coloured margin; spathe narrow and much elongated.

No. 2. *N. LEEDSI*.—Flowers large; segments of the perianth broadly and obtusely oval, about twice the length of the cup, yellow, spreading plane; cup between cyathiform and cupulate, deep yellow; the margin indistinctly lobed, and of a deep bright orange colour; spathe somewhat elongated.

No. 3. *N. MAJOR SUPERBUS*.—Flowers very deep yellow; segments ovate spreading; scarcely equalling the broad campanulate cup, which is plaited, deeply lobed, and spreading at the margin; spathe short, obtuse. The fine varieties of Narcissus represented in the accompanying plate are seedlings raised by E. Leeds, Esq., of St. Ann's, Manchester, a gentleman who has been for many years engaged in the cross-breeding of this tribe of plants, and who has originated many distinct and beautiful varieties. Those now figured along

with some other very handsome seedlings, which we shall publish shortly, were most obligingly sent to us last April by Mr. Leeds, who gives the following account of their origin: The variety *poculiformis elegans* was obtained from *poculiformis* (*montanus*) crossed with *angustifolius* or *poeticus*. N. Leeds, differing chiefly from *incomparabilis* in the colour of the margin of the cup, was produced from major crossed with *poeticus*, which latter has communicated to it the deep orange ring. N. major *superbus* is a seedling from major or Ajax *maximus*. "There is no end," writes Mr. Leeds, "to the varieties and elegant forms that may be obtained. It is quite clear, however, that *incomparabilis* is no species. I think *bicolor* is not a species, and that the number of species is very small. The late Dean Herbert in his papers on this tribe mentions N. *montanus* (or *Tros poculiformis*) as being difficult to obtain seeds from. I have three crops of seedlings from this crossed both with long and short-tubed kinds; it will cross with Ajax of all sorts, with *poeticus* and *angustifolius*, and I think with the Rush-leaved species. *Calathinus* never seeds with me, but its pollen fertilises the long-tubed species. *Bicolor* seeds occasionally, but not freely. I have varieties from this with *angustifolius*, *poeticus*, and *poculiformis*, also *pumilus*; they are all very distinct and curious. *Moschatus* and *tortuosus* seed pretty freely; they will cross with *poeticus*, *poculiformis*, and any of the long-tubed kinds, and the produce is always beautiful. I think much remains to be done in the production of fine hybrids of this beautiful tribe of plants, and it may be mentioned these are not ephemeral productions like many modern florist's flowers, but will last for centuries with very little care, as the common kinds have done in our gardens." In the same volume, p. 289, is another coloured plate as before likewise containing three of Mr. Leeds' seedlings. These are as follows:—

N. 1. N. *AUREO-TINCTUS*.—Flowers large; segments of the perianth twice as long as the cup, oblong-lanceolate, spreading, sulphur coloured; cup almost cylindrical, yellow, faintly tinged with orange on the margin; spathe one-flowered, about as long as the pedicel.

N. 2. N. *INCOMPARABILIS EXPANSUS*.—Flowers large; segments of the perianth oblong-obtusely mucronate, plane, spreading sulphur-yellow; cup short, expanded, and indistinctly lobed, bright yellow, spathe rather exceeding the pedicel.

N. 3. N. *BICOLOR MAXIMUS*.—Flowers large; segments of the perianth oblong-ovate, spreading, pale yellow, equalling the larger deeper yellow funnel-shaped cup, which is lobed and wavy at the margin; spathe one-flowered, more than twice as long as the pedicel; leaves $1\frac{1}{2}$ inches broad.

Here again we are told that "the annexed figures are representations of some other of the seedling *Narcissi* raised by E. Leeds, Esq., of Manchester, and referred to at p. 169. The varieties now published, though perhaps less strikingly novel in appearance than those just alluded to, are yet very handsome and showy plants, and quite different from any of the kinds at present in cultivation. The most remarkable is perhaps N. *bicolor maximus*, which has leaves resembling those of *Pancratium maritimum* more than the foliage of a *Narcissus*; the flowers too are very large, though not possessing novelty of colour. In this respect N. *aureo-tinctus*, with its pretty tinge of orange on the cup, is a desirable variety, though possessing a less perfect form than some others as regards the perianth; it is remarkable also for its straight-sided cup. N. *incomparabilis expansus* is remarkable for the wide-spreading form of its cup and the broad flat lobes of its perianth. The variety N. *bicolor maximus*, was obtained from *bicolor*, crossed either with *maximus* or *propinquus*; N. *aureo-tinctus*, Mr. Leeds believes to have been produced between *propinquus* and *calathinus*; while N. *incomparabilis expansus* is the offspring of major crossed with *poeticus*."

There are two names used in the above descriptions which require some explanation. Thus the

N. *calathinus* mentioned by Mr. Leeds is a variety of N. *odorus*, a Rush-leaved kind, that will be found figured in the *Botanical Magazine*, vol. xxiv., t. 934, under the erroneous name of *calathinus*.

N. *pumilus*, again, is Herbert's name for N. (*Ajax*) *minimus*. There is also a N. *pumilus* figured in Redoute's "Les Liliacées," t. 409. Under the head of "Culture," at page 169, the editors publish some hints on raising seedlings and their treatment, for which they were indebted to Mr. Leeds. The advice of such a veteran is well worth repetition now that so many of our *Narcissus* amateurs are engaged in hybridising and cross-breeding experiments. "To obtain good varieties," says Mr. Leeds, "it is needful the previous season to plant the roots of some of each kind in pots and to bring them into the greenhouse in spring to flower, so as to obtain pollen of the late-flowering kinds to cross with those which otherwise would have passed away before these were in flower. With me the plants always seed best in the open ground. When the seed-vessels begin to swell the flower-stems should be carefully tied up and watched until the seeds turn black. I do not wait until the seed-vessel bursts, as many seeds in that case fall to the ground and are lost, but take them off when mature with a portion of the stem, which I insert in the earth in a seed pot or pan provided for their reception. I place them in a north aspect, and the seeds in due season are shed as it were naturally into the pot of earth. I allow the seeds to harden for a month on the surface before covering them with half an inch depth of sandy soil. The soil should be two-thirds pure loam and one-third sharp sand; the drainage composed of rough and turfy soil. In October I plunge the seed pots in a cold frame facing the south, and the young plants begin to appear in December and throughout the winter, according to their kinds and the mildness of the weather. It is needful in their earliest stages to look well after slugs and snails. The seedlings should be protected from frosts, but should have abundance of air, or they will soon draw. As soon as they will stand exposure, plunge the pots under some sheltered wall or hedge, and they will form their first bulbs. Let them become dry in summer, and if it be a wet season, turn the pots on their sides until the time for them to grow again. Let them remain in the seed pots and top-dress them with fresh loamy soil. When the bulbs are two years old, prepare, in an open, airy situation, a bed of good loam mixed with sharp sand; prepare the bed as for Tulips, &c., covering the entire surface with sand, in which the bulbs should be embedded; plant the roots in rows 3 inches apart, and each root 1 inch apart in the row. They will stand three years in this bed, when they may be finally removed into a fresh bed of similar soil to flower; a few will flower the fifth year, but the greater portion not until the seventh. I do not take up the flowering roots oftener than every third season, but top-dress the beds every autumn. A little thoroughly decayed hotbed manure mixed with the surface soil aids them to produce fine flowers, but it must be well decomposed, or it will do harm. The beds should be well drained, the prepared soil at least 2 feet deep, and the situation sheltered from north and east winds, which do much damage to the flowers."

To Mr. Leeds' advice, one of the editors (Mr. Moore) adds the following note: "When the strength of the flowering bulbs is an object they should not be permitted to produce seeds except such as may be actually required, as in hybridising experiments or for the purpose of increasing the stock of rare kinds. This, indeed, is a general principle in the culture of flowering plants, but is sometimes overlooked in practice. Nor in transplanting should the bulbs be kept out of the ground longer than sufficient to dry and rest them."

I hope we shall be able to secure other reliable accounts of Mr. Leeds' life history and work—indeed, of all those who have in any way helped to enrich our gardens with these most lovely flowers of spring.

F. W. BURBIDGE.

Aciphylla squarrosa has done well this season bedded out in the Edinburgh Botanic Garden. In the neighbourhood of London this and many other New Zealand plants get affected by the damp foggy weather which we experience. Some large beds, part of a design cut out in Grass in front of the houses at Edinburgh, were filled with this plant, and well it looked, its long spiny, beautifully glaucous leaves being very handsome. I am told that here even in winter this plant gives no trouble whatever, a statement borne out by its robust and healthy growth. In a bed close by *Erica vulgaris* with double flowers, was in full bloom, and a fine sight it was.—K.

Tigridias.—These were unusually fine with us throughout August and September. I grow them in a bed adjoining an Orchid pit, with an air drain under the bed connected with a stoke-hole which is 8 feet below the ground level. The bed, when made up, is well dressed with old hotbed manure, composed of three-quarters leaves and one-quarter stable litter. I planted the bulbs about the middle of April; they grew 3 feet high and produced very fine blooms. We are now gathering seed every day or two as it ripens, protecting it with thin shading on frosty nights. I have a good batch of seedlings, raised from seed sown last spring, for planting next April. Nothing can be more gorgeous than a well-grown bed of *Tigridia Pavonia* when in flower.—JOHN GARLAND, Killerton, Exeter.

Carnation mounds.—In front of a pretty cottage belonging to the owner of a small farm, who is also an enthusiastic gardener, are masses of Carnations and Pinks growing on a mound. These, I was told, were planted ten years ago; large rustic blocks of tree trunks, with part of the middle scooped out to hold soil, were placed there, and the Carnations and Pinks planted in them. There the original plants have remained. As the wood decayed and the soil shrunk, more good mould was added, until now only the skeletons of the blocks are left, and nothing can be seen but an attractive, natural-looking mound of strong, healthy Grass, the foliage of the Carnations; very charming, too, the latter are when covered, as they are naturally with their fragrant and beautiful flowers.—A. M., Cranmore.

The Tree Poppy (*Romneya Coulteri*), well figured from a drawing by Mr. Moon in last number of THE GARDEN, size of nature, is the only plant hitherto honoured with a coloured portrait twice in THE GARDEN. It was the superb beauty of the plant at Munstead this summer that made us resolve to figure it again. The first plate was from specimens not nearly so fine. It is difficult to find any terms which give a just idea of the airy grace of this fragile-looking, but tall and wiry, bush with blossoms like—well, we seek in vain for a comparison, for we have seen nothing so fair in the way of a flower as these enormous white blossoms, with the rich yellow mass of stamens bossed in the centre of the translucent petals, plaited in texture and so fine in form, as to bear comparison with the drapery of a fine Greek statue. We think the name Tree Poppy a good one for this plant.

Narcissus princeps.—"F. W. B." (p. 364) states that this Daffodil is naturalised in Ireland by tens of thousands; this may be so, and, personally, am quite willing to wait till the point is proven. I should not be surprised, if the subject was looked into, that more of this Daffodil has up to the present time gone from England and Holland to Ireland than have been shipped from Ireland to England. I have corresponded a great deal with amateurs living in different parts of Ireland, and, curious to say, only two had this plant, and one of the two had a clump or two, while the other has no great quantity. The question is one easily settled, seeing how generally THE GARDEN is read in Ireland. Does "F. W. B." really mean that N. *princeps* is wild in Ireland in the sense that N. *pseudo-Narcissus* is wild in England, that is, found in places where it is probable no human habitation ever existed? "F. W. B." asks if N. *princeps* is wild in Holland. I cannot answer

that question with certainty, but so far as my enquiries have gone there is but one *Narcissus* wild in Holland—viz., pseudo-*Narcissus*, and it is not plentiful. I have seen clumps of *N. spurius* growing by the side of canals in Holland, but not as a wild plant. If England chose now to compete in the Daffodil line with Holland, it would be an easy matter, as I doubt not that in quantity we have more of these roots than there is in Holland, and we have a soil that can grow them better. Still, bulb growing is a trade in Holland, and enjoying the flowers is a pleasure in England.—P. BARR.

THE WHITE AND ORANGE LILIES.

WHAT hardy flowers have held such high rank for so long in our gardens as these two beautiful Lilies? For nearly 300 years have they been the especial favourites of flower lovers. The white Lily has always been a particular favourite, and it has been the theme of the poets, the model of painters, and the symbol of spotless purity. It is peculiarly a cottager's flower, for while it grows and flowers with the greatest freedom in old-fashioned cottage plots, it absolutely refuses to even grow if subjected to the coddling treatment

gether; but if such could be the case, what beautiful harmony of colour would be the result. Innumerable recipes have been given from time to time in THE GARDEN for the successful culture of the white Lily, but after all a great deal of the success depends upon the locality, and particularly on the character of the soil. The orange Lily is not so fastidious, although some experience a little difficulty with it, particularly in chalky soils. It never seems to thrive better and certainly never shows to better advantage than when peeping out of the fringe of a *Rhododendron* bed, the deep leafage of the shrubs being an admirable set off to the flowers. The white Lily, on the contrary, must have an open spot, though not too much exposed, in order to successfully grow it. Moreover, the soil must be of a heavier description than that of a *Rhododendron* bed, and nothing seems to suit it so well as a stiffish loamy soil that has been under cultivation for generations.

SOCIETIES.

ROYAL HORTICULTURAL.

Nov. 11.

THE principal exhibits on this occasion were *Chrysanthemums*, of which there was an attractive display, composed chiefly of new sorts submitted for the opinion of the committees. First-class certificates were awarded to the following:—

CATTLEYA TRIOPHTHALMA.—A hybrid Orchid, said to be a cross between *C. superba* and *C. exoniensis*. The flowers bear a strong resemblance to those of *Lælia elegans*, being of about the same size, with rosy sepals and a deep amethyst-tinted lip. Though pretty, this is quite a second-rate hybrid compared with others which have been raised by Messrs. Veitch. Shown by Mr. Ballantine, gardener to Baron Schroeder, The Dell, Egham.

AERIDES SANDERIANUM.—Probably the finest of all the species of the section of *Aerides* to which it belongs, and is even finer than the new *A. Lawrenceæ*. The latter, together with *A. Sanderianum*, may be best described as magnified forms of *A. odoratum*, the flowers being similar in form, but twice as large. The flowers of *A. Sanderianum* have creamy white sepals tipped with the intensest carmine, while the fragrance is powerful and delicious. It is unquestionably a first-rate Orchid, and one of the finest of new introductions. The plant, exhibited by Mr. Lee, Downside, Leatherhead, bore a fine long raceme of flowers.

IPOMÆA THOMSONI.—The new stove climber which has been described as a white variety of the well-known *I. Horsfalliæ*, which it so much resembles in growth. The flowers are pure white, but the specimen shown on this occasion by Messrs. Veitch did not represent the plant in good condition. It will probably prove a desirable stove climber.

ONCIDIUM INCURVUM ALBUM.—This differs from the type only by the flowers being white instead of rose. It is an extremely rare Orchid. It was shown by Mr. Lee, Downside, Leatherhead.

CUPRESSUS LAWSONIANA FLEETI.—Of the numerous varieties of this variable *Cypress* now in cultivation we have never seen one so distinct from the original as this. The growth is different, stiffer, and more erect, while every part of the plant is covered with a bluish grey glaucous hue, giving it a most ornamental appearance. Exhibited by the raiser, Mr. G. Fleet, Uckfield.

CARAGUATA ANGUSTIFOLIA.—A Bromeliaceous plant of a dwarf tufted habit of growth, somewhat resembling a *Tillandsia*. In the middle of the rosette of leaves a dwarf flower-spike is produced, scarcely overtopping the foliage. This is furnished with bright scarlet bracts, while the tubular flowers are of a clear chrome-yellow. If it habitually flowers at this season, it may prove a useful decorative plant. Shown by Messrs. Veitch.

VIBURNUM TINUS AUREO-MARGINATUM.—A golden-edged-leaved *Laurustinus*, pretty and distinct, as the variegation is pronounced and constant. It will be valuable for conservatory deco-

ration in winter, even if it is not hardy in the open. Exhibited by Messrs. Lee & Sons, The Vineyard Nursery, Hammersmith.

PELARGONIUM LA CYGNE.—The finest double white zonal variety yet raised. The trusses are large and dense, and each flower is quite a rosette of petals of pure white. The habit of growth, moreover, is all that can be desired. Shown by Messrs. Cannell, Swanley.

CARNATION CHEVALIER.—A perpetual-flowering variety of great merit, inasmuch as the colour of



Lilium croceum.

which the majority of newer Lilies undergo. Again, as regards the sturdy orange Lily, *L. croceum*, what finer object can there be in early summer than a bold clump of it peeping out of the fringe of a shrubbery? The massive heads of apricot-yellow flowers vie in brightness with those of any other Lily. As it flowers earlier than the white Lily, both are seldom seen in flower to-



The white Lily (*Lilium candidum*).

the flowers is so different from the usual stamp. The blooms are large and full; the petals are of a soft primrose-yellow, edged and flaked with carmine. Exhibited by the raisers, Messrs. Hooper & Co., Covent Garden.

SENECIO PULCHER.—Though so many years have elapsed since this handsome composite was introduced, it appears that it had never received a certificate, so the committee awarded one to some very fine specimens of the plant which Mr. Barron had brought from the society's garden at Chiswick. These had been grown in a cold frame, and the spikes, about 18 inches high, bore each about a dozen blooms and buds.

CHRYSANTHEMUM CULLINGFORDI.—Undoubtedly one of the best new varieties of the season, and one that will become popular, as the colour, a bright crimson-red, is so distinct and attractive; the flowers are large and the florets are broad and reflexed. Shown by Messrs. Cannell; raised by Mr. Cullingford.

CHRYSANTHEMUM LA BIEN AIMEE.—A Japanese variety with large flowers, long and narrow florets of a delicate blush-white. Messrs. Cannell.

CHRYSANTHEMUM STAR OF WYKE.—A small-flowered sort, though not a true pompon. The blooms have reflexed florets, yellowish in the centre, but the rest pure white. Messrs. Cannell.

CHRYSANTHEMUM ROSEUM PICTUM.—A Japanese variety with large shaggy blooms of a deep rosy carmine, with the reverse sides of the florets whitish. A very fine sort. Messrs. Veitch.

CHRYSANTHEMUM LA PURETE.—A Japanese sort, with large loose heads of long and drooping florets, which are snow white, and therefore very chaste and beautiful. Shown by Messrs. Laing, Stanstead Park Nurseries, Forest Hill.

CHRYSANTHEMUM CRITERION.—One of the Japanese section; flowers large, florets long and slender, of a cinnamon-buff colour. Shown by Messrs. Veitch.

CHRYSANTHEMUM ANAIS.—A singular-looking pompon variety, not very showy, but neat and pretty. The colour is peculiar and indescribable; the blooms quite conform to the florist's model as regards form. Messrs. Laing.

CHRYSANTHEMUMS, as before remarked, were the chief attraction, the principal exhibitors of them being Messrs. Cannell, Messrs. Laing, and Messrs. Veitch. The collection of cut blooms from Messrs. Cannell numbered about 100 varieties, representing all classes of the flower, all admirably grown. Besides a selection of the best of the older sorts of incurved and Japanese varieties, the following new sorts were shown by this firm: Mad. Féral, broad florets, rosy pink, very fine; Julius Scharff, florets long and narrow, rosy carmine; Mignon, like James Salter, but darker; M. Bouchardet aîné, crimson florets, pale reverse side; Mary Anderson, blush florets, yellow centre; Rev. A. H. Glennie, deep chestnut, crimson-yellow centre; Magenta King, deep magenta; Neatness, quilled; Val d'Andorre, deep red-crimson; Volcan and Black Douglas, both pompons, the latter of a deep crimson, the former light.

Messrs. Laing's collection comprised the following new sorts: John Laing, buff-crimson florets peculiarly twisted; Cendrillon, Mdme. de Sevin, Galathée, deep rosy, long narrow florets; La Flamboyante, florets crimson, outer surfaces pale yellow; Président Lavallée, incurved, reddish bronze florets, very broad; Le Niger, reflexed florets, rich claret crimson, one of the best; Camieu, large, rosy carmine; Mons. Tarin, florets long and narrow, white, changing to pink; Mons. Henri Jacotot, bright orange-crimson, golden tipped; Timbale d'Argent, white Anemone-flowered, neat and pretty; Beauté des Jardins, reflexed florets, deep rose-carmine; Joseph Rozain, deep rose, flowers large; La France, highly attractive, florets long and narrow, bright yellow changing to chestnut-red; Frou-frou, bright crimson-red, golden tipped; Jeanne d'Arc, incurved white, tipped pink; Mons. Comte, deep carmine-rose, half reflexed; Souvenir de François Marrouch, in the way of James Salter, but with tubular florets in the centre; Brise du Matin, similar to the last, but with smaller flowers; Reine des Alvéoles, large, Anemone-flowered rose-purple; Elegant, pompon flowers, small bronzy yellow, neat and pretty.

Among the new sorts from Messrs. Veitch's was Tubiflorum, a singular variety, with narrow tubular flowers of a pale pink. The finest, however, of the whole collection was Talfourd Salter, a reflexed variety of a bright Indian red tipped with gold, very floriferous and showy. Besides these were the following, most of which we described last week: Prince of Orange (Salter); Mdme. Féral, incurved, pleasing rose-pink; Etoile du Midi, reflexed Japanese, vermilion-crimson; Carmen, deep rosy carmine; Colibri, reflexed, reddish crimson; Elise Layeillon, reflexed pompon; John Laing, bright chestnut-crimson; Beauté des Jardins, vivid carmine-purple; Mary Salter, pure white; Orange Quill, Belle Alliance, Souvenir du Japon, Fernand Féral (pale pink), M. Léon Brunel, Mdme. Antoinette Brunel, Fleur des Bois, crimson (Veitch).

Besides the Chrysanthemums a few other interesting plants were shown. Mr. Lee showed a

fine spike from the Vanda Sanderiana plant which first flowered in Europe. It was much finer than the original spike. Mr. Norman Cookson, of Wylam-on-Tyne, showed a beautiful and most interesting hybrid Calanthe named Sedeni, which, however, is distinct from the hybrid originally named Sedeni, and in our opinion superior. It was obtained from a cross effected in 1881 between *C. vestita rubro-oculata* and *C. Veitchi*. Messrs. Lee, Hammersmith, showed a new variegated Lawson Cypress named *erecta viridis argentea variegata*. It is pretty and distinct, but not sufficiently developed to judge rightly of its merits. Messrs. Carter showed their new blue *Primula Holborn Gem*, which we are pleased to see is becoming bluer every season. A few early Cyclamens were shown by Mr. Clay's gardener (Mr. Wiggins), Twickenham, and Mr. Stevens, St. John's Nursery, Putney, showed two new Chrysanthemums, one of which, a semi-double white, we thought very pretty. Messrs. Veitch had, besides the plants certificated, a new *Dracena* named Rudolph Seidel and *Phyllanthus Chantieri*, the latter an elegant-leaved plant.

Fruit.—There were but few exhibits submitted to the committee, the chief being three fine bunches of Mrs. Pearson Grape, large and well finished, sent by Mr. Taylor, Mr. McIntosh's gardener at Dunevan, Weybridge. Other exhibits consisted of seedling Apples sent from various sources, all of which were passed by the committee without comment.

NATIONAL CHRYSANTHEMUM SOCIETY.

NOVEMBER 12 AND 13.

THE grand exhibition of Chrysanthemums, which took place at the Royal Aquarium, Westminster, on Wednesday and Thursday last, was the first held under the auspices of the newly-constituted National Chrysanthemum Society, formed from what was originally the Stoke Newington Society, the oldest of the London Chrysanthemum societies, and later the Borough of Hackney Society. The present amplification of the society is the outcome of a generally expressed opinion that a Chrysanthemum society should be formed which should be other than local. Therefore, the Hackney Society, which felt itself strong enough to undertake the responsibility of a wider extension, determined to re-model itself so as to make it a national society. The expectations of the promoters of this change have been more than realised, a fact exemplified by the magnificent show which took place at the Aquarium on Wednesday. It was by far the largest that has yet been held there. Another proof that support to the national society is forthcoming may be gleaned from the fact that whereas last year the members numbered only 100, now there are upwards of 200. The exhibition itself, moreover, clearly showed that it was not at all local, inasmuch as exhibitors from distant counties took part in the competition. The very liberal prize list no doubt was the principal means of attracting the distant exhibitors, the prizes ranging from £15 to 5s. Out of thirty-eight classes devoted to Chrysanthemums no fewer than twenty-nine were set apart for open competition, the remainder being restricted to competitors in the metropolitan district, or rather those residing within a radius of 3½ miles from Shoreditch Church. We might suggest to the society that it would be advisable to extend this area for the metropolitan classes, and take a more central point for a focus than Shoreditch Church, which tends to give the society too much of a local character. Why not take the cab radius for the metropolitan classes, which would be four miles from Charing Cross as a centre? This would include all the town districts where Chrysanthemums are grown in the smoke. If this area were adopted, the society, we feel sure, would find many more supporters than it now has; moreover, it would be less local than it now is. The arrangement of the show was better than we had hitherto seen it at the Aquarium, and the management throughout, with the exception of a few minor

details, left nothing to be desired. It was quite evident, judging from the visitors from all parts of the country, that great interest is taken in a representative central society, and that London is the place in which to hold a national show goes without the saying.

By the prize list, which we publish in full in our advertising columns, it may be seen that one or two exhibitors were exceptionally fortunate, and none more so than Mr. Herrin, of Chalfont Park, Gerrard's Cross, who, as it were, carried everything before him, his collections being first in almost every case. It would have been interesting to have seen him in competition with other noted growers, such as Mr. Molyneux, of Swanmore Park, who was successful in carrying off the Challenge Trophy, worth some £25, at the Kingston show the day previous. Mr. Gibson was a strong opponent to Mr. Herrin, his blooms being remarkable for large size, though they lacked somewhat the refinement of the Chalfont blooms. Coming to the town-grown blooms, there were no more creditable blooms in the show than those shown by Mr. Sanderson, the veteran president of the society. His stand of twenty-four incurved blooms were perfection, as were also his first prize twelve incurved blooms. Mr. Berry, from Roehampton, also showed grandly. The classes for incurved sorts throughout were good on the whole, but some very inferior stands were shown. On the other hand, the Japanese blooms were unexceptionally good, particularly those from Mr. Herrin and Mr. Child in the first prize collections. It is difficult to say which the general public admired most, the old-fashioned incurved sorts or the new Japanese race, but the latter seemed to come in for the greatest attention, their informal shape and diverse and subtle colours being the admiration of all.

FORTY-EIGHT BLOOMS.—This was the principal class in the show, comprising twenty-four incurved sorts in eighteen varieties, or twenty-four Japanese sorts in the same proportion. There was an excellent competition, there being seven exhibitors, all showing finely. The most successful of these was Mr. Herrin, Chalfont Park, Gerrard's Cross. His selection consisted of eight blooms, a first-rate selection, every bloom possessing good solidity of petal, form, neatness, and colour. The names were: Alfred Salter; Empress of India, large (2); Golden Empress, massive (2); Lord Wolseley, fine in form (2); Queen of England, rich in colour; Jeanne d'Arc, deep, neat form (2); Prince Alfred, neat; John Salter, Mr. Heales, very fine; Lady Hardinge, extra; White Venus, Princess Beatrice, Barbara, good (2); Princess Teck, Refulgens, Cherub, Lord Alcester, Pink Venus, fine in form. *Japanese sorts.*—Comtesse de Beauregard, large (2); F. A. Davis, rich; Madame C. Audiguier (2); Boule d'Or, extra large, rich in colour; Fair Maid of Guernsey (2); Baron de Prailly, Themberg, Fanny Bouchardet (2); Triomphe de la rue du Château, M. Ardène, Soleil Levant, Agréments de la Nature, Roseum superbum, Alba plena, full flower; Duchess of Albany, Mdme. Moulise, slightly faded; J. Délaux (syn., W. A. Davis), Hiver Fleur, Grandiflora, finely coloured.

TWENTY-FOUR INCURVED BLOOMS.—Among nine the best collection, a very fine one, came from Mr. E. Sanderson, Harlesdon, the president of the Society. This selection comprised: Alfred Salter, Hero of Stoke Newington, Emily Dale, Queen of England, John Salter, Princess Beatrice, Miss Mary Morgan, Madame Madeleine Tezier, Mr. Brunels, Jardin des Plantes, Nil Desperandum, Mabel Ward, Golden Empress of India, Empress Eugénie, Princess of Teck, Empress of India, Lady Hardinge, Princess of Wales, Barbara, Mrs. W. Shipman, Golden Eagle, Cherub, Yellow Perfection, Antonelli. The other prize-winning collections in this class were likewise good.

EIGHTEEN INCURVED BLOOMS.—Only nine collections were shown of these; the first prize, sent from Mr. E. Berry, consisted of Alfred Salter, Golden Empress, Prince of Wales, Empress of India, Prince Alfred, Princess of Wales, Barbara, Empress Eugénie, White Venus, Refulgens, Jar-

din des Plantes, Lady Slade, Nil Desperandum, Mr. Bunn, Lord Wolsley, St. Patrick, Hero of Stoke Newington, Mrs. Dixon, Lady Talfourd, Mrs. G. Rundle, Bronze Jardin des Plantes.

TWELVE INCURVED BLOOMS.—This was a large class, no fewer than sixteen collections being shown. Mr. Sanderson again showed the finest, the sorts being Empress of India, Barbara, Empress Eugénie, Lady Hardinge, Emily Dale, Princess Beatrice, Hero of Stoke Newington, Princess Teck, Mrs. W. Shipman, Alfred Salter, Golden Empress of India, Queen of England. This was a fine class throughout, the second and third collections being particularly remarkable for high quality.

SIX INCURVED BLOOMS (one sort).—Among nine sorts the new Lord Alcester, a very fine creamy white sort, was first; Empress of India, a lovely ivory white, was second and third. Other sorts shown were Mrs. G. Rundle, Barbara, Hero of Stoke Newington, John Salter, and Jardin des Plantes.

The class for twelve blooms, to consist of four incurved, four Japanese, and four Anemone-flowered sorts, was represented by thirteen exhibitors, Mr. Herrin being the most successful. He had a very fine stand, consisting of The Daimio, Fair Maid of Guernsey, Triomphe de la rue du Châtelet, and Duchess of Albany among Japanese sorts; Golden Empress of India, Queen of England, Empress of India, and John Salter among incurved; and Lady Margaret, Mdme. Berthier Pignez, Mdme. Cabrol, and Fabian de Médiana among Anemone-flowered sorts.

TWENTY-FOUR JAPANESE BLOOMS.—Among seven Mr. Herrin was first with the following: Comtesse de Beauregard, Triomphe de la rue du Châtelet, Mdme. C. Audiguier, Boule d'Or (rich), Baron de Prailly, Fair Maid of Guernsey, M. Ardene, Grandiflora, Alba plena, D. Macary, M. Délaux J. Delaux, Fanny Bouchardet, Thunberg, M. Astorg, Magnum Bonum, Agréments de la Nature, Meg Merrilies, Roseum superbum, Peter the Great, Margaret Marrouch, Sarnia, Duchess of Albany, Hiver Fleurie.

TWELVE JAPANESE BLOOMS.—The best dozen blooms among twenty collections was shown by Mr. Child, Claygate, Esher. His selection consisted of Elaine, M. Desbreaux, Balmoreau, Peter the Great, Hiver Fleur, M. Délaux, Fanny Bouchardet, M. C. Audiguier, Alba plena, F. A. Davis, Baron de Prailly, and L'Incomparable. Some half-a-dozen collections in this class left little to be desired.

ONE JAPANESE SORT.—Among twenty sets of six blooms the sort Mdme. Audiguier took the first and second prizes, by Messrs. Anderson and Glen, both showing some uncommonly fine blooms of this beautiful rose-pink variety. The third prize was taken by the yellow grandiflorum, while other sorts shown in this class were Baron de Prailly, Yellow Dragon, Mdme. B. Rendatler, Elaine, Lady Selborne, Meg Merrilies, Roseum superbum.

TWELVE ANEMONE-FLOWERED SORTS.—Among ten dozens the finest was from Mr. Herrin. His selection consisted of Empress Louis Bonamy, Georges Sand, Mdme. Berthier Pignez, Fabian de Médiana, Lady Margaret, Minnie Chaté, Louis Bonamy, Mdme. Cabrol, Mrs. Pethers, Mdme. Goderaux, Souvenir de l'Ardenne. Among sixteen sets of one sort the lovely large white Lady Margaret took all the prizes, and some wonderfully fine blooms were shown for the first prize. This sort was the principal one shown by the other exhibitors.

POT PLANTS.—These were in every way superior to what has been shown for years at this place, and some really wonderfully fine specimens of dwarf-trained plants (pompons) were shown for the first prize in the metropolitan class for nine trained plants. These were all about 5 feet through, and the Mushroom-shaped heads were literally covered with bloom. The sorts were Rose Andrometer, pink; La Vogue, yellow; Lilac Cedo Nulli, Fanny, red; Sœur Mélanie, white; Marguerite de Coi, lilac, Anemone-flowered. Some excellent plants were also shown in the open

classes in the first prize groups, particularly those in the class for nine plants. The groups arranged for effect on a space of 100 square feet were of the usual stamp, consisting of a mass of plants arranged with a sloping bank. The first prize group, though the quality of the blooms did not equal that of the second prize group shown, was effectively arranged with due regard to lightness, and as the merit of effect was specially mentioned in the schedule, the judges adjudicated accordingly. The second group, from Mr. Stevens, of Putney, consisted of well-grown plants carrying flowers of good quality. These groups arranged for effect are at the best a garish display, and we wonder the society does not allow exhibitors to arrange their plants with foliage to tone down and harmonise the colours.

FRUIT AND VEGETABLES.

Numerous prizes were offered for Grapes, Apples, Pears, and Potatoes, and collections of vegetables, and these added considerable interest to the exhibition. Some really fine exhibits were shown in the Grape classes, the collection of twelve bunches from Mr. Pratt, of Longleat, who took the first prize, being exceptionally fine. He had enormous bunches of Alicante, some large highly-coloured Muscats, and equally fine Lady Downes. The class for three bunches was not so much represented, though some first-rate Muscats were shown in the class for a white sort. Only three exhibitors showed white Grapes and two a black variety. Among a dozen collections of twelve dessert Apples, Mr. Miller, of Northdown, Margate, was first; he also showed the finest half-dozen dishes of cooking Apples among eight. Mr. Ross, of Welford, and Mr. Goldsmith were also prize winners in the Apple classes, while Mr. Goldsmith and Mr. Waterman were the only exhibitors of Pears, which usually is a numerously represented class at this show. There was a strong competition in the classes for Potatoes, no fewer than ten showing sets of six dishes and six of twelve dishes, all being of first-rate quality.

MESSRS. SUTTON'S PRIZES for vegetables brought out a strong competition, there being thirteen exhibitors. The first prize winner amongst these was Mr. May, Captain Le Blanc's gardener at Northaw House, Barnet, who is now well known as a successful vegetable cultivator and exhibitor. His selection on this occasion consisted of selected Brussels Sprouts, Autumn Giant Cauliflower, Lyon Leek, Lapstone Kidney Potato, Hathaway's Excelsior Tomato, and Major Clarke's Celery. This was in every way an excellent collection. The second and third collections, from Messrs. Miller and Howard respectively, showed some uncommonly fine examples.

MESSRS. WEBB'S PRIZES for six kinds of vegetables also attracted a goodly number of competitors, there being ten collections, none of which were inferior. The first prize winner, Mr. Miller, of Rood Aston Park, had an uncommonly fine set, his dishes being Autumn Giant Cauliflower, Vicar of Laleham Potato, Sandringham White Celery, Banbury Onions, Carenton Leek, Snowball Turnip, and Student Parsnip. The collections shown for Messrs. Webb's prizes, as well as those for Messrs. Sutton's, have rarely been surpassed at any show.

Prizes for Potatoes were offered by Mr. R. Dean, of Ealing. The competitors were to show three dishes selected from a list of about twenty-five sorts which have been either raised or sent out by Mr. Dean. Some half-a-dozen exhibitors competed for these prizes, the most successful being Mr. Herrin, of Chalfont. Messrs. Hooper also offered prizes for twenty fine tubers of their Earliest of All Potato, but there were but three or four competitors. Messrs. Barr offered a prize for six plants of Brussels Sprouts, the only exhibitor being Mr. May, who showed some fine specimens of his new selected sort.

Chrysanthemum shows.—The past has been the Chrysanthemum week in the south, and next week the northern growers will hold their exhibitions, those at Manchester, Liverpool, Bir-

mingham, and Hull being the most important. Particular interest attaches to the Hull show, inasmuch as so young a society is able to offer such liberal prizes, £10, £7, £4, and £2 being offered for 48 blooms in the open competition. The schedule is divided into three sections or classes—open, first amateur, and second amateur—a capital arrangement, as it invites everybody, including bouquetists. With energetic secretaries and an influential chairman (Mr. Bohn, the son of the late Mr. Bohn, of Twickenham), the society augurs well for the future.

Gumming Roses.—In reply to the communication which you have received from Mr. Johnson, hon. secretary of the Leek Rose Society, we are requested by the committee of the National Rose Society to say that they, in their decision, expressed no opinion whatever upon the practice of gumming Rose blooms, as they had no law to guide them in the matter. After taking all the circumstances of the particular case submitted to them into consideration, they came to the conclusion that as the exhibitor in question had infringed no existing regulation of either society, the prize could not be withheld from him. When the new bye-laws and regulations, which the committee have for some time past had under consideration, and which will be submitted to the society at their next general meeting, are in print it will be seen that the committee of the National Rose Society discontinue the practice of tampering in any form or shape with Rose blooms intended for exhibition. At the same time they wish it to be clearly understood that in their opinion it is, but very seldom indeed that such practices are resorted to by exhibitors.—H. HONYWOOD D'OMBRAIN, EDWARD MAWLEY, Hon. Secretaries.

LATE NOTES.

Seedling Chrysanthemums (J. Acton).—The single yellow sort is, we think, pretty and well worth perpetuating; the others are not remarkable.

Primulas (A. T. Nant).—We do not remember having seen a variety exactly similar to yours, but without means of direct comparison it is difficult to say whether or not it is distinct from others in the class to which it belongs.

Covent Garden.—Among the other improvements now being made by the Duke of Bedford in Covent Garden is a very considerable enlargement of the wholesale flower market, in order to afford greater facilities for the increasing trade that is being done in flowers.

Gardening changes.—Mr. George Parkin, late wood agent to the Earl of Wharfedale on that nobleman's extensive estates in South Yorkshire, has been succeeded in that post by Mr. John Simpson, who will in future conduct both the gardens and woods there. Mr. Parkin held the above situation for nearly forty years.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—H. — Reineckia carnea. — C. Leaf. — True Service tree (Pyrus domestica). — E. F. C. — Euonymus europæus (spindle tree). — G. Chequer. — Black-fruited Thorn (Crataegus nigra). — C. George. — The seedling Dahlia is Cosmos atropurpureus, called also Dahlia Zimapani, now tolerably common. — Anon. — 1, Cerastium tomentosum; 2, Coronilla glauca; 3, Gasteria verrucosa; 4, Nerium Oleander. — J. P. (Norfolk). — Lycium barbarum (the Tea plant). — C. C. — 1, Aspidium acrostichoides; 2, Polystichum munium; 3, cannot identify (Athyrum?); 4, Asplenium Trichomanes; 5, Asplenium Adiantum nigrum. — R. C. Appleton. — Eriogonum racemosum. — J. N. Bright. — Jerusalem Artichoke (Helianthus tuberosus), tubers of which are edible.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

Names of fruits.—A. D. — 2, Round Winter Non-such; 3, Yorkshire Beauty. — T. W. — 1, Irish Peach, probably; 2, Luffness Matchless. — S. A. G. — 1, Beurré d'Arenberg; 2, Broom Park; 3, Winter Nelis. — A. C. H. O. — Not known. — Thomas W. Simpson. — Not known. — R. Liney. — 6, Fearn's Pippin; 7, Northern Greening. — F. Geeson. — 1, Golden Ducat; 2, Reine des Canadas. — J. Day. — 1, Grange's Pearmain; 4, Egg or Paradise; 2 and 3, not recognised. — J. F. S. T. — 1, King of the Pippins; 2, Yellow Ingestrie; others next week.

No. 679. SATURDAY, Nov. 22, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

COTONEASTER AFFINIS.

NOTHING can be more beautiful in the way of berried shrubs at this season than a well-grown specimen of this *Cotoneaster*. We have a plant of it in the shrubbery 20 feet high and about as much through, every branch of which is heavily laden with bunches of glossy red berries. Every year it produces fruit in the most profuse manner. It is a plant that well deserves a place in every shrubbery, and it requires no more attention than the common Laurels, among which it is growing. It is also well adapted for planting along the margins of covers or game preserves, as it affords abundance of food for pheasants, which are very fond of its berries. I have started from eighteen to twenty pheasants at a time from under its branches. Our plant of it here is exposed to the east, and is partially shaded on the south and west by a very large Lucombe Oak and other trees. Probably the more fully it is exposed to the influence of the sun, the more freely does it produce its beautiful clusters of fruit. All visitors greatly admire it, but scarcely any of them know what it is. Young plants of it are readily raised from seed.

JOHN GARLAND.

Killerton, Exeter.

* * That this lovely berry-bearing shrub should be comparatively unknown is to be regretted. It would, indeed, be difficult to match it either for beauty or effectiveness. Its berries, which are produced in clusters in the greatest abundance, would be invaluable about Christmas-time when Holly berries are scarce. It will succeed perfectly well in all the warmer parts of the country, and now, when we are in the midst of the planting season, it should not be overlooked.—ED.

THE HILLSBOROUGH PERNETTYAS.

REFERENCE was made to these really charming berry-bearing shrubs in THE GARDEN a few weeks since, but I think their special qualifications—I mean as rockwork ornaments—have not yet been set forth. No doubt they are very beautiful anywhere—dotted about the margins of sunny shrubberies, in beds by themselves, or in chinks round the margins of Rhododendron and other flowering shrub beds. All these positions they can occupy with much credit to themselves, but their position *par excellence* is the embellishment of rockwork nooks. None of them are either rampant or rambling in growth. All are suitable for either small or large arrangements, and as they are of such diversified colours, ranging from white through lilac on to rich purple, and from pale rose to deep crimson, and as all bear their berries in such profusion and retain them from early in autumn until late in spring, thus lighting up the dreariest months of the year with masses of colour hitherto quite unattainable at that season, they become a power in the hands of the landscape gardener which he need not be slow to use. They appear to succeed in many kinds of soil. I have seen them flourish in wet, clayey ground, in pure peat, and in stony, dry soil; but what they seem to thrive best in is a yellowish loam, enriched with a liberal admix-

ture of leaf mould, and an open, fully exposed position is the one in which they most rejoice; in fact, they succeed admirably on the boisterous hillside where scarcely anything else but Gorse will live; their low, close, bushy habits and small, rigid, shining foliage offer nothing really for the wind to lay hold of. The following I have found the most suitable for limited spaces, being specially low growing and compact; there is only one fault, so far as I can discover, about them, and that is their nomenclature. It is quite evident that the raiser was puzzled at their baptism; though some of them bear the most diversified names, they are not unlike each other. If half the number distributed under name had been selected, it would have comprised about all that were really distinct.

Among very dwarf forms are *atro-lilacina*, the berries of which are half-an-inch in diameter and lilac in colour, distinctly shaded with purple; *carnea nana*, a beauty, berries small-sized, of a deep flesh colour, and produced in great profusion; *coccinea purpurea*, berries medium-sized and bright crimson suffused with purple; *purpurea macrocarpa*, a beautiful shade of purple, berries half-an-inch in diameter; *rosea macrocarpa*, berries very large, bright rose; *r. lilacina macrocarpa*, berries full size, rich rosy lilac; *r. purpurea*, rosy red, shaded with purple; and *sanguinea*, crimson-scarlet, distinct.

Larger growing varieties whose ultimate height would be about 2 feet: *alba*, the most distinct of all; on the shaded portion of the plant the berries are pure white, where exposed tinged with blush; *atro-coccinea*, rich dark shiny crimson; *atro-purpurea*, berries large, of a shaded purple colour; *elegans*, free in growth, and one of the prettiest, berries bright pink; *lilacina*, whitish lilac, pretty; *macrocarpa*, berries bright crimson, full half an inch in diameter, and borne in great profusion; *rubra lilacina*, of precisely the same colour as *rosea lilacina macrocarpa* in first group, but with larger berries; *nigra major*—this has no doubt attained the major degree of blackness, but it is certainly not major in any other sense; it is, however, very distinct.

It is not, however, alone as a berry-bearing shrub that the *Pernettya* is valuable. It is also an excellent flowering shrub, being in the spring-time profusely laden with pure white Lily-like bells—often so much so as to quite hide the foliage.

Newry.

T. SMITH.

ORCHID NOTES FROM ST. ALBANS.

No one interested in Orchids can at any season visit Messrs. Sander's nursery at St. Albans without seeing something uncommon—either some startling novelty, some re-discovered species, or some long-lost favourite recovered by some one of the dozen or more trained collectors that are constantly employed to satisfy the demands of this gigantic Orchid establishment. Scarcely a week passes but some new or rare Orchid is announced, for vast importations are consigned to St. Albans from every quarter of the globe, culled from trodden tracts as well as from unexplored regions. Even Schomburgk's footsteps have been retraced in Tropical America, the result being that after a lapse of some fifty years *Cypripedium Lindleyanum* is again among us. In short, the St. Albans Orchid dépôt, octopus-like, stretches out its arms to gather in its supplies from all quarters. Among novelties expected to make their appearance in due time are some new *Angraecums*, alleged to possess a quaint and altogether novel appearance. Then, again, there is the new *Oncidium vernixium*, which has just flowered, and the new *Barkeria*

Barkerioli, both exceptionally beautiful and entirely new.

FLOWERING PLANTS even now in the middle of November are by no means scarce. We noticed some hundreds of the lovely autumn-flowering form of *Odontoglossum vexillarium* *Klabochorum*, unquestionably a most distinct and invaluable Orchid. Its flowers are not so large as those produced in summer, but their colour is richer, and under a leaden sky look ten times lovelier than in June. *Odontoglossum Alexandrae* has just commenced its long and continuous flowering season, and the thousands of plants pushing up spikes will be a fine sight at Christmas-time. The new *Aerides Leoni*, a handsome species, *Vanda limbata*, various *Cypripediums* and *Oncidium*s contribute to the display, and among flowering *Cattleyas* we observed *C. Dowiana* and a superb variety of *C. Loddigesii*, the finest we ever remember to have seen. The centre of attraction, however, was a pair of magnificent specimens of *Laelia elegans alba*, one of which has no fewer than 150 bulbs. The chaste beauty of the white blossoms of this *Laelia* renders it quite unapproachable when seen *en masse*. The home nursery in the town is, as usual, crammed full of newly-imported plants, but the most interesting are two housefuls of *Masdevallia Harryana* and its varieties, including a yellow form and one called *tricolor*, particularly remarkable even among select varieties, which alone find a place here. The other houses contain flowering specimens of the rare *Phalaenopsis Reichenbachii* and the new white *Saccolabium Harrisoniae*, a lovely plant—indeed the counterpart of the original, but having its long racemes of blossoms of pure ivory whiteness. Its fragrance, moreover, is delicious, and much enhances the value of the plant.

A NEW PHALAENOPSIS HOUSE is among the principal new structures erected since our last visit, and as we consider it a model in its way, it may be well to describe it somewhat in detail. Its dimensions are 120 feet by 21 feet. In the centre is a cemented tank, into which heated water flows direct from the boilers at a point nearest the furnace, and at the opposite end the water finds an exit through the return pipe to the boiler; therefore, a constant supply of highly-heated water is contained in this huge tank, which gives off its heat gradually and uniformly, and thus maintains the house at an equable temperature. Fears were entertained at first as to the success of the scheme on account of the great body of water to be kept in circulation, but they were dispelled when a strong tubular saddle boiler was set to work; this put the tank water in slow motion effectually. The tank, which is of course quite closed, is covered at the top with slates, over which is spread a layer of short horse manure to a depth of about 6 inches. On this is placed a thin layer of small pebbles upon which the plants are set. Besides the heating power afforded by this tank, there are sixteen rows of 4-inch pipes in the house. These, however, will not be often used; they are provided merely as an auxiliary in case of need. The moist, hot tank, it is found, maintains a very congenial atmosphere for the *Phalaenopsis*, and this moisture is augmented by that from two other tanks which run the entire length of the house on both sides; through each of the latter is placed a return hot-water pipe, so as to raise the temperature of the water, but the pipe is regulated by a valve, so as to prevent over-heating. Above the side tanks double stages are erected, and upon the lower one is placed a layer of manure; the upper stage consists of Pitch Pine laths. Along the whole length of the sides, as in the case of every other house erected here, pipes half an inch in diameter are fixed for the purpose of ejecting sprays of water over the paths and side beds. The ventilation at top is on one side only, Mr. Sander disliking the counter draught of top air in his Orchid houses, as it tends, he considers, to deprive the atmosphere of its moisture. The side ventilation is effected by means of openings so arranged that the incoming air has to pass downwards and come in contact with the heated pipes before it is diffused in the

house. The paths consist of Staffordshire bricks having the frog uppermost, an arrangement which keeps the path dry, while the frog retains moisture. This is a capital plan, and should be adopted in all Orchid houses. Every one of the houses here have paths of this description.

THE NEW CATTLEYA HOUSE, an immense structure previously described, is now filled to overflowing with huge specimen plants, and the multitudes of roots which one sees fixing themselves to whatever comes in their way is a sure indication that though Orchid houses be capacious, size is not prejudicial to the health of the plants provided the necessary conditions are looked to. As regards these aerial roots, they afford quite an interesting study; so much do they differ from each other in form, that the various species may often be determined by the root alone, and in all cases the roots of a Cattleya are taken into consideration in the matter of nomenclature. The roots of *C. Eldorado*, *superba*, and *Skinneri* are particularly distinct. All the several sections are grouped together in this house; thus there are the *labiata*, *Trianae*, *Mossiae*, *Mendeli* sections all separate. There are some 2000 specimens in this house, and some very large, and a few of *Lælia elegans*, numbering from 100 to 300 bulbs. The invaluable new *C. Gaskelliana*, introduced lately by this firm, is among the most conspicuous of the flowering Cattleyas, and comprises some remarkable forms.

Imported Orchid sales.—I was pleased to see "Veronica" again directing attention to this subject. It is scarcely possible to over-estimate the importance of careful selection, not only to the collector, but to the grower here. It is to be feared that in many instances quantity rather than quality is the object in view. The experiment of Mr. Mann appears encouraging and the result of the sale satisfactory. Whether other collectors will be induced to make more careful selections remains to be seen. The cost of transit, &c., would not be greater, and any additional expense incurred in selecting and packing would doubtless be fully compensated. No doubt many growers, as well as actual purchasers, will anxiously watch the progress of Mann's plants, and should the result justify the expectations formed, great credit will be due to that collector. It is certainly vexatious to find plants, for which considerable sums have been paid, turn out to be inferior to older and probably much cheaper varieties. It is small satisfaction to the grower, after all the anxious care bestowed on their cultivation, cost in time, firing, &c. (and may be neglect of some older and worthier variety), when complaint is made, to be told that the amount paid for the plant will be refunded. Surely something better could be arranged, or the risk of disappointment reduced.—M. J. R.

An ancient Myrtle.—The disappearance of remarkable trees as well as remarkable buildings deserves recording. About half a mile from Lyme Regis and one mile from here stands an old mill which played a part in Messrs. Besant & Rice's well known story, "Trafalgar's Bay," and, with the adjacent waterfall, is the constant subject of artists. Until within a few weeks ago there stood against it a Myrtle tree, probably one of the oldest and largest in England. The trunk at 1 foot from the ground was within a trifle of 2 feet in diameter. That part of the building against which it spread is of considerable antiquity, doubtless nearly three centuries old. If I may hazard a guess at the approximate age of this venerable Myrtle, I think I should not be far out if I set it down at over 200 years. It could not have much increased in size during the last half or three-quarters of a century, as it grew out of the roadway, where it received only the barest sustenance, and which doubtless ultimately starved it to death. The comparatively limited space which it covered is explained by the fact that large limbs had at different times been lopped off. It would be interesting to know if any of your readers can furnish instances of larger growth or authenticated greater antiquity.—J. M., *Charmouth, Dorset*.

PLANTS IN FLOWER.

November Pansies.—Some really good Pansy flowers have been sent to us during the week by Mr. Kingsmill, who states that he cut dozens of blooms the other day in his garden at Eastcott, Finer.

Heliathus argyrophyllus is here the best of the annual Sunflowers that have moderate-sized blooms. It has been gay since July and still is; several degrees of frost this morning have in no way affected it. Its numerous branches are still covered with buds, although it is too much to expect it to last much longer. This and the perennial *H. cinereus* are the last in flower out of a collection of nearly a score of kinds. *Helenium grandiflorum* still displays finely its large, curiously reflexed blooms.—J. M., *Charmouth*.

Flowers in Anglesey.—A lady, writing from Anglesey, says: "We have a wonderful show of out-of-door flowers still, consisting of *Roses*, *Petunias*, *Heliotropes*, *Passion Flowers*, *Gentians*, *Geraniums*, *Mignonette*, white *Jessamine* and yellow; the *Desfontainia* is in great beauty, and the pink *Belladonna Lilies* are not quite over. We have also quantities of red *Schizostylis*, white and yellow *Daisies*, *Ageratum*, *Marigolds*, and the fancy *Fuchsias*, besides *Chrysanthemums*, *Spiræas*, *Veronicas*, and what we regard as our winter flowers."

Plants in bloom at Wisley.—Six degrees of frost at Oakwood last night gave warning that the end of this season's summer flowers was at hand, so I looked round to see what plants had still blooms on them and made a list of them; some had many flowers, some only one or two:—

<i>Malva capensis</i>	<i>Fuchsia Riccartoni</i>
<i>Agathaea celestis</i>	<i>corallina</i>
<i>Neja gracilis</i>	<i>Morina longifolia</i>
<i>Eriothera taraxacifolia</i>	<i>Malva lateritia</i>
<i>riparia</i>	<i>Gentiana acaulis</i>
<i>missouriensis</i>	<i>verna</i>
<i>Lychnis, double-flowered</i>	<i>Lobelia splendens</i>
<i>Scabiosa parnassii</i>	<i>Gaillardia splendens</i>
<i>Androsace lanuginosa</i>	<i>Tradescantia</i>
<i>Abelia rupestris</i>	<i>Croc.</i> , several species
<i>Thymus rotundifolius</i>	<i>Zauschneria californica</i>
<i>Mazus Pumilio</i>	<i>Lychnis Lagasce</i>
<i>Campanula Portenschlagiana</i>	<i>Plumbago Larpentae</i>
<i>Rubus roseofolius</i>	<i>Verbena venosa</i>
<i>Vinca acutiloba</i>	<i>Primula denticulata</i>
<i>Carnations</i> , a few	<i>floribunda</i>
<i>Pinks</i> , ditto	<i>obconica</i>
<i>Schizostylis coccinea</i>	<i>Primroses, double yellow</i>
<i>Senecio pulcher</i>	<i>Cheiranthus, buquet</i>
<i>Rudbeckia Newmanni</i>	<i>mutabilis</i>
<i>Pyrethrums, double</i>	<i>Erpetion reniforme</i>
<i>single</i>	<i>Artemisia maritima</i>
<i>Arenaria loricifolia</i>	<i>Viola glabella</i>
<i>Coronilla ibérica</i>	<i>Bellium bellidoides</i>
<i>Phlox Nelsoni</i>	<i>Houstonia cerulea</i>
<i>amœna</i>	<i>Ophiopogon Jaburan</i>
<i>Geum miniatum</i>	<i>Salvia patens</i>
<i>aureum</i>	<i>Horminum</i>
<i>Erodium Manescavi</i>	<i>Parochetus communis</i>
<i>Richardi</i>	<i>Meconopsis cambrica</i>
<i>Potentilla dubia</i>	<i>Astrantia major</i>
<i>other species</i>	<i>Linum monogynum</i>
<i>Erigeron mucronatum</i>	<i>Silene maritima fl.-pl.</i>
<i>glaucum</i>	<i>Lobelia ilicifolia</i>
<i>Pernettyas</i>	<i>Campanula Hosti alba</i>
<i>Matricaria inodora fl.-pl.</i>	<i>Veronica elliptica</i>
<i>Anthemis tinctoria</i>	<i>decussata</i>
<i>Arabis procurrens</i>	<i>Lamium, white</i>
<i>Chrysanthemum maximum</i>	<i>Heaths</i>
<i>atratum</i>	<i>Menziesias</i>
<i>Coreopsis</i>	<i>Rhododendron Wilsoni</i>
<i>Calamintha grandiflora</i>	<i>Aponogon distachyon</i>
<i>Eryngium falcatum</i>	<i>Wahlenbergia saxicola</i>
<i>paniculatum</i>	<i>Lycasteria formosa</i>
<i>Aster sikkimensis</i>	<i>Violets</i>
<i>Geraniums</i>	<i>Laurustinus</i>
<i>Delphiniums</i>	<i>Arbutus Croomi</i>
<i>Pentstemons</i>	<i>Gyneryum argenteum pumilum</i>
<i>Pansies</i>	
<i>Antirrhinum</i>	

G. F. WILSON, *Heatherbank, Weybridge Heath.*

Open-air flowers at Newry.—I send you a gathering of autumn flowers. The *Anemone* season, as you will see, has begun, and will continue without interruption until June next. *Fuchsia Mme. Cornellissen* is still about the hardiest of its race, and a profuse and continuous bloomer; *Schizostylis coccinea* is bright and beautiful; *Tritoma grandis* is truly so called, and *Lilium speciosum album*, the latest of all, is still blooming freely, though some of the buds get injured by wet before they expand; *Tobacco* (*Nicotiana*) is not at all a bad autumn subject. Good bushes of it 4 feet high have rather an imposing appearance among shrubs, and are quite a mass of rosy flowers. *Genista canariensis* flowers the whole season through, and is now golden and cheery; *Calceolaria amplexicaulis* is, perhaps, the best yellow-flowered plant for late autumn; *Spiræa Bumalda* is still bearing buds and blossoms profusely. There is no dwarf shrub like

this for pretty effect; it is almost perennial flowering. *Hypericum patulum* and *uralum* (nepalense) are still profusely dotted with golden cups; *Godetias* of sorts are about the most continuous flowering and showiest of annuals, and still profusely in bloom; *Primula japonica* is flowering out of season, but it is none the less acceptable for all that; *Fuchsia reflexa* is a sweetly pretty shrub, and still profusely flowered; *Canterbury Bells* are quite a feature in some parts of the garden. Plants which were cut over, and not allowed to go to seed after flowering, broke into new growth, and a fresh crop of flowers is the result.—T. SMITH.

Musa coccinea.—This is again in flower in the Palm house at Kew, where a number of potfuls of it are grown for the sake of its brilliant scarlet flower-heads produced during the winter months. By separating the suckers from the bases of old plants, by which they are borne in abundance after flowering is over, and potting them in threes in 10-inch pots in a strong, loamy soil, plants of flowering size are obtained by the end of the year. A full-grown specimen of *M. coccinea* does not exceed 6 feet in height, the stem is not so thick as a man's wrist, and the leaves, which are pale green, are about 3 feet long and curve gracefully. In the centre of the whorl of foliage the inflorescence appears; it is composed of a number of large overlapping bracts, inside which the whorls of insignificant flowers are borne, the whole forming a head or cone of some 8 inches in length and of the brightest scarlet. This cone remains in beauty for several weeks, and when cut and placed in water forms an ornament not unworthy of a place amongst flowers for the decoration of rooms, &c. An interesting species of *Musa*, viz., *M. textilis*, which in size and habit resembles the above, and which yields a fibre employed in the making of thread and textile fabrics, is also in cultivation at Kew. Unlike *M. coccinea*, this species seems very difficult to flower, at least we learn that at Kew it has not been known to blossom. Perhaps some of our readers may be able to afford some information on how this *Musa* may be induced to produce flowers.

Anthurium ferrierense.—As is the case with the majority of hybrid plants, this *Anthurium*, which has been obtained by crossing *A. Andreanum* with *A. Roezli*, proves to be very prolific in the way of flowers, even more so than *A. Andreanum*, which is not slow in the production of its queer-looking blossoms. *A. ferrierense* has been represented at Kew for the past twelve months by a rather small specimen, and this has not been without one, and often two together, of its bright looking flowers during the whole of that time. In our opinion this hybrid is a more useful plant than either of its parents, as it grows more compactly and flowers much earlier and with more freedom than its white-flowered parent, *A. Roezli*, whilst when compared with *A. Andreanum* it proves superior in the tinting of its bracts as well as in the structure of the whole flower. *A. Andreanum* is a curiosity—a freak of nature—remarkable enough in its curiously-puckered spathe and curving bi-coloured spadix. But it is not beautiful, though quaint. In the Kew collection we noticed both the parents of *A. ferrierense* in flower, and it occurred to us that it would be worth while trying to cross this hybrid with one or both of its parents. We learn that at Kew *A. ferrierense* does not produce seeds, although both of its parents seed freely. The result of experiments made with a view to testing the reproductive capacity of this distinct hybrid would be an interesting contribution to the knowledge which we at present possess of this capacity in other plants of distinctly hybrid origin.

Aubrietia olympica.—What is known of this plant? Is November its normal blooming season? If this is the case, it is a valuable addition to our late autumn rock plants. A large plant, given me a year ago, is now brilliantly in flower on rockwork. It is less dwarf than the spring flowering *Aubrietias*, and the flower-stalks rise with a certain air of importance that distinguishes it at once in character from the more modest tufted growth of the spring-flowering kinds.—G. J.

INDOOR GARDEN.

POTTING LILIES.

THE annual root disturbance to which Lilies in pots are subjected is, I am convinced, often misdirected energy. In many instances they would flower just as well or better if allowed to remain in the same pots two or more years in succession. I am confirmed in this belief by the behaviour of a pot or two of white Japan Lilies which were not shifted or in any way disturbed at the roots last season. As is well known, the white variety is not so strong of growth as the red-flowered sorts, but with me this year it threw up very strong flower-stems, which attained a height of 5 feet, and the flowers were quite as large and the foliage as broad and handsome as on those which had been shaken out and repotted. One pot carried about twenty stems, each one bearing from six to a dozen flowers, which were as good as I ever remember to have seen those of the white variety. There is another item in Lily culture to which I would direct attention—*i.e.*, the top-dressing of the plants when they have come into growth. It is a generally accepted rule that in potting the bulbs sufficient space should be left for applying a top-dressing of some light material at a later period, but is there any good reason why the pots should not be filled up at once? I fail to perceive that any good purpose is served by delaying this operation; on the contrary, I believe that sometimes harm results from it. I have remarked that roots issue in a general way from the lowermost portion of the stems as soon as these are 2 inches or 3 inches in height. If they have to grow through several inches of soil, they push roots into it just when they are ready to do so, but they cannot if the soil is not there; and it frequently occurs that through press of work the top-dressing is unduly deferred, or that the grower fails to realise the importance of applying it at an early period of growth, in which case time, and consequently strength, is lost, for the older the flower-stems become the more reluctantly do they emit roots.

IN THE OPEN GROUND Lilies have often to push through 6 inches of mould, and they can do this just as well as when in pots. Before I leave this part of the subject I would like to ask your Lily-growing readers whether they have accurately marked the difference in the growth of top-dressed plants and those which have been potted in the manner commonly practised in the culture of pot plants. I have grown them both ways and with, so far as I can perceive, but little difference in the result. It is said that top-dressing increases the size of the blossoms and intensifies the hue of the foliage, but bulbs potted so that they come within an inch of the rim of the pot were in these respects no way behind those treated in orthodox fashion. For top-dressing the bulbs must be set low in the pots, so that the amount of soil at the disposal of those roots which issue from the bulbs is materially reduced; and after all, these are the mainstay of the plants, and if I am not very much mistaken, their health, numbers, and activity, in conjunction with the amount of nourishment at

their disposal, must always be the primary consideration. What caused my attention to be more particularly directed to this matter was the way in which some plants grew and bloomed which were shifted on from 6-inch into 12-inch pots without disturbing the roots. The balls being a mass of healthy, active fibres, I did not have the heart to disturb them, so that when put into the fresh pots there was scarcely any space left for top-dressing. The flower-stems of these plants attained many of them a height of 6 feet, and bore from twenty to thirty flowers, some of the pots carrying nearly 200 expanded flowers and buds. I never saw stronger plants than these, and they were the admiration of all who saw them. It is therefore certain that top-dressing is not absolutely necessary to high development of Lily growth. There was one thing about these plants that particularly pleased me—they looked so natural; there was not the slightest appearance of formality or stiffness about them. This was caused by their being shifted on from small pots without disturbing the bulbs, so that, increasing, as they do, annually, they ranged at last in size from the dimensions of a good-sized Walnut to that of a cricket-ball. Therefore, when they grew, some shot up very strong and tall, whilst the remainder came in varying height,



Rhododendron multicolor var. *Curtisi* (detached flower natural size; colour crimson).

coming down to quite small growths, which, though they did not yield flowers, furnished the base of the specimens, overlapping the pots, and forming a mass of leafage and bloom as irregular and natural of growth as clumps left alone in the open ground do. Very little staking was done; only the strong stems had sticks, and these were rather supported than tied up so as to avoid rigidity, whilst those stems which carried several blooms only grew at will, and assumed that graceful arching habit which is characteristic of this fine Lily when growing naturally, and which is quite obliterated by the usual method of staking. A few more words in conclusion. If you want flower-stems from 4 feet to 6 feet in height, pot now, and never at any time after flowering allow the roots to shrivel from want of water; but if you want a succession of bloom from mid-August to mid-October, pot some in December and again early in February.

BY FLEET.

Striking flowering tops of Chrysanthemums.—At the Stoke Newington Chrysanthemum Show, which took place the other day, our neighbour, Mr. Chitty, and another exhibitor showed some dozen plants about 18 inches high, in 3-inch pots, of the recurved and other good blooms. In August and September the pots had

been put round the stems, as the Italians do their Camellia plants, some 18 inches from the top of the plants, and they had rooted so strongly that many of the pots were full of strong cuttings. Some days before the show they were cut off from the mother plant. They are now blooming in a cold house, and the blooms look to stand as long as if they had been on the mother plants. They are useful for room decoration, mantelpieces, tables, sick rooms, &c., where large plants cannot be used.—J. R. D., *Stamford Hill*.

RHODODENDRON MULTICOLOR CURTISI.

TO every newly-introduced species of *Rhododendron* our gardens accord a hearty welcome, and more particularly if so much distinct from older species as to be likely to bring about a new race of hybrids. Such is the case with *R. Curtisi* here illustrated. It is a native of Sumatra, but affects high elevations, often as much as 3000 feet; hence it is tolerably hardy. It is of dwarf spreading growth, only growing 2 feet high. The branches are slender, and the leaves long and narrow and not very abundant. The flowers are campanulate, of wax-like texture, and hang in clusters, three and four together, terminating the twigs. It seems to be remarkably floriferous, as even small plants produce numbers of flowers, which are of a deep crimson-red. It has been introduced by Messrs.

Veitch through their collector, Mr. Curtis, and when shown last year at South Kensington was awarded a first-class certificate. Since then Messrs. Veitch have flowered a pale coloured variety, which they call *luteolum*. It is quite distinct from any other *Rhododendron* as regards colour, and may be put to good use in the production of hybrids.

It is now nearly forty years since horticulturists made their first acquaintance with the magnificent race of *Rhododendrons* that inhabit the mountains of South-eastern Asia and the islands of the adjoining archipelago. The first important introduction was *R. javanicum*. This fine species was closely followed by *R. jasminiflorum*, from Mount Ophir, *R. Lobbi* and *R. Brooki*, from

Borneo, the progenitors of that grand race of hybrids raised in the Exotic Nursery, Chelsea, which are destined to occupy a foremost place amongst decorative plants for the intermediate house and warm conservatory. The species just named were followed in time by *R. citrinum*, *R. malayanum*, and one or two others now not often met with. Quite distinct from all these, however, is *R. Curtisi*, the latest addition to the group, and at the same time one of the most beautiful and effective.

FERN JARS.

INFORMATION was recently sought in *THE GARDEN* (see p. 309) as to the mode of covering Egyptian porous jars with Ferns, and the variety best suited for the purpose. Only comparatively few gardeners have had anything to do with this somewhat strange method of growing Ferns, and perhaps some of those who have would not have regretted if they had been denied the privilege of making the experiment. The jars are in shape something like an earthenware crutch, with a loop handle at each side and a hole in the top. Water is poured in daily, and the clay of which the jar is made is sufficiently porous to allow it to percolate through it gradually. Ferns are placed over the outside of the jar, which is after-

wards suspended to the roof, and they must of necessity almost entirely subsist on the water that oozes through from the inside. I once saw some of these jars that had been brought from Malta, where they must have been grand, as seen suspended in porches outside the houses, and forming globular balls of Fern 3 feet or more in diameter. We afterwards had some new jars to cover in a similar way that had been specially sent for. Thinking that some soil would be necessary, and knowing it would be difficult to fix it to the jars, some fresh turf was cut thinly, and the vitality of the Grass destroyed by placing it on a warm fire. With this and other methods we did not succeed satisfactorily in all cases, although a few afterwards did well. An examination of those imported ready furnished showed that only a small portion of a yellow tenacious loam and plenty of copper wire had been used for fixing purposes. We then obtained some tempered clay, and proceeded on the same lines with strong little plants of *Adiantum Capillus-Veneris*, the same variety we observed that had been used on the others, and which is best suited for the purpose, on account of its mode of spreading on the surface and the means thereby afforded for tying it on the jar. We turned the jar upside down, and having fixed it on three inverted empty pots, we began on the lower part, placing alternately a plant and a lump of the soft tempered clay. This adhered sufficiently to the jar to hold the Ferns, and when the surface was covered so far as possible we reversed the jar and finished the upper part; it was then suspended. Rather large copper wire was then bound round in all directions, crossing the rhizome-like roots of the Ferns, and by drawing it rather tightly it became hid in the clay, while at the same time it held all firmly together. The jars were then filled with water and suspended to the roof in a stove temperature. I have no data to which I can refer respecting the season at which this experiment was performed, but believe it was either in winter or early in spring. Nearly every plant grew admirably, but those that were strongest when put on succeeded by far the best. In twelve months, speaking from memory, the clay was nearly hid by the Ferns. A more immediate effect might have been obtained by placing them closer together at first, but then a considerable number would be required, the surface being much larger than it appears to be at first sight. The spores from the Ferns employed grew in large numbers on some parts of the clay, but I do not think it practicable to furnish the jars by these alone, as it would take much too long a time. Again, the spores appear so thickly together that it would be impossible for them to grow satisfactorily without being pricked out. It is advisable to withhold water for a few days occasionally, but not long enough to allow the clay or soil to crack through dryness. The process of covering and the after treatment for some time require considerable patience and attention to accomplish all properly. When once established and become balls of Fern, these jars at least represent a novel mode of cultivation, and are, in addition, certain to prove a source of much interest to all who may have to do with them. J. G. K.

FLOWER-POTS.

LATELY patents have been taken out for both flower-pots and flower-pot saucers, and from time to time, ever since we remember, alterations and so-called improvements of the form of both have been introduced, some of which showed quite a misconception of the purposes for which flower-pots are used. There have been single and double-sided pots, deep pots, shallow pots, straight-sided pots, ventilated pots, glazed pots, and other shapes and qualities, all advocated for some special purpose or other, but on the whole the common old-fashioned pot still holds the first place. The first thing which cultivators have to recognise is the fact that the flower-pot is just a necessary evil that cultivators would be glad to dispense with

if they could, and which they do dispense with whenever they can. It was found necessary, however, to employ some kind of vessel in which to grow plants, and the common earthenware pot, with a hole in the bottom, presented itself as the cheapest and most convenient article for that purpose, and it is not likely to be soon superseded, although some of the samples produced by makers are anything but handsome or of good quality. A flower-pot standing out of the ground is not a good receptacle for the roots of a plant, because it exposes the roots to vicissitudes and alternations of heat and moisture not suited to them, and to which nearly all the difficulties of plant culture in pots are traceable, such as diseases, insect attacks, failure of crops, and many other troubles. It is above all necessary that a flower-pot should provide ready means of drainage, because a plant in a pot having to be frequently watered would soon be water-logged if the supplies of moisture could not run off quickly. This has led to a great variety of shapes in flower-pot bottoms, and makers have competed keenly with each other in devising schemes of drainage and ventilation in that direction. At first the flower-pot had only one hole in the bottom, the hole being in the centre; then more holes were added, and the bottoms were also raised off the ground or made concave; and just at present makers are wrangling as to who were the originators of this so-called improvement. Pot manufacturers have all along fallen into the error of supposing that it was the number or arrangement of the holes and the shape of the bottom of the pot on which proper drainage depended; whereas the drainage depends on the placing of clean cinders, stones, or potsherds in the bottom of the pot, and not upon the holes, which are merely outlets for the water. Providing so many large holes in a pot, the biggest of which rarely holds more than a cubic foot of soil, is absurd, for all cultivators know that one hole in the centre of the bottom is quite sufficient in all cases, and cultivators need not trouble their heads about the number of holes or the shape of the bottom so long as they take care to drain properly before potting. No arrangement yet provided keeps worms out of pots, unless it be placing a piece of finely perforated zinc over the hole inside before putting in the crocks. Worms are only troublesome, however, when pots are set on the ground without ashes or a piece of slate under them, and even then they can be quickly dislodged by a single watering with lime water. J. S.

HYBRID BEGONIAS.

IN THE GARDEN (p. 351) an account is given of some seedling Begonias which had been obtained by crossing B. Rex with B. Davis by the Messrs. Sutton, and some doubt was expressed as to the possibility of such a cross being made. In July, 1882, I obtained a plant of B. Davis from the nursery, which when in flower I fertilised with pollen from B. Rex. The result of this was about eighteen plants, all more or less like the male parent, the only difference that I could see being a slightly dwarfer habit. They were not distinct enough to keep, although they differed from each other, no two being exactly alike; they were therefore thrown away. The writer of the note on Messrs. Sutton's Begonias says it is well known that the South American tuberous-rooted Begonias have hitherto refused to cross with any species outside the limits of their own group. Allow me to differ from that statement. You will see from the following extract from the catalogue issued by Messrs. Veitch for this year that such a cross has been obtained: "*Begonia Novelty* is a hybrid raised by our foreman, Mr. Heal, from B. lineata, a native of Java, and the Peruvian species B. Davis, the latter being the seed parent. The plant has the dwarf, compact habit of B. Davis with a modification of the fine foliage of B. lineata. The leaves are obliquely cordate-ovate and pointed, the upper surface slightly rough, of a deep metallic green, densely spotted with silver-grey. The flowers are produced in the autumn in twos and threes on slender scapes

rising well above the foliage, and are of a bright rosy pink. THE GARDEN says this seems to be the forerunner of quite a new and distinct race, as its characters are peculiar to itself." In 1882 Messrs. Veitch distributed under the name of B. Autumn Rose a hybrid raised from B. socotrana × B. insignis, which was exhibited at one of the Horticultural Society's meetings, and also was noticed in the pages of THE GARDEN in the autumn of that year.—J. H. V.

* * The result of "J. H. V.'s" experiment on B. Rex and B. Davis appears to have been practically a failure, or at least no more satisfactory than the crosses made by Col. T. Clarke, as recorded by Mr. Burbidge. "J. H. V.'s" seedlings were remarkable in taking almost wholly after the male parent. It is to be regretted they were destroyed, as although they were not sufficiently distinct to prove useful as garden plants, they might have been made use of in further crossings. We suspect, however, that in such a case, as in all cases where two totally distinct species of plants are crossed, the progeny would be sterile; for although there are many instances of the offspring of two species proving fertile, as, for instance, the South American tuberous-rooted Begonias, it is urged that such cases are only proofs of the close relationship of the parents, and that they are not really specifically distinct. It would therefore be interesting to test such a cross as that of B. Rex × B. Davis by crossing again their progeny. When we said the South American tuberous-rooted Begonias had "hitherto refused to cross with any species outside the limits of their own group," we were thinking of the shrubby section rather than of the species with tuberous root-stocks, and whose stems are annual. B. lineata is of the latter character and belongs to the section which includes B. Martiana, B. picta, and the new B. Beddomei. These plants are very closely allied to B. Davis, B. Veitchi, and the rest of the South American kinds; they are therefore the most likely species to unite with B. Davis. In our opinion the second cross mentioned by "J. H. V." is not so interesting as the B. Rex cross. Nor do we think any really valuable results are to be obtained by mixing the Rex group with the South American tuberous-rooted kinds. The hybrid raised from B. socotrana × B. insignis is interesting, but hardly a case in point.—Ed.

Anthracite coal.—Anthracite coal and coke cannot be compared together. The coal, being so much less in bulk than coke, gives a steady heat of perhaps more than double the duration of coke and requires much less attention. When your correspondent names steam coal, I presume he refers to a good sample of bituminous or, as it is called in this country, soft coal, to distinguish it from the non-bituminous or hard coal, the term usually given to the anthracite. The latter is exclusively used in greenhouse boilers east of Pittsburg, which probably includes nine-tenths of the greenhouses in the States. This coal gives a very strong, steady, and lasting heat without any smoke or soot, and very little flame. If of good quality, it makes but little ash and very few clinkers, but contains much sulphur, which, if the fireplace is damp, rusts on the boiler in the form of sulphuric acid. We find the best sizes for large boilers requiring a steady fire from 10 p.m. to 6 a.m. to be what are called here egg, which run from the size of a small to a large hen's egg, and broken, which run from the large egg to about half a brick in size. A tolerably thin fire of this will last many hours without attention if the ashes are thoroughly cleared out when started in the afternoon. With moderate attention the fires are never out from the start in autumn until spring. We often require a much more intense heat in our greenhouse boilers in this country than is ever required in England, but I fail to see how that should affect a boiler full of water. Anthracite coal is universally used in the New York district for steam boilers and for hot air and stove heating for dwellings. I consider it best in every respect for all purposes except for making gas.—JAMES TAPLIN, Maybrook, New Jersey, U.S.A.

ROSE GARDEN.

ROSES FROM CUTTINGS.

THE time has now arrived when the long growths on Roses are of no further use on the plants, and, as a matter of fact, the latter will be benefited by having them shortened back, so as to reduce the size of the head and give the wind less power to blow them about. The shoots thus obtained may be turned to profitable account by converting them into cuttings, which by careful planting may in due time be made into plants. There are two ways of dealing with the cuttings from which a fair proportion of plants may be expected. In our own case, having an odd light to spare, we have made a temporary frame on a warm border, and, having mixed some sand with the soil, have dibbled in the cuttings pretty thickly, and put the light over them. The latter we shall cover up during very severe weather, and once or twice during winter we shall get a short thick stick and ram the soil firmly between the cuttings, as I find they root better in a firm soil than in a loose one, and the worms will be sure to work amongst them and loosen the earth. Another way is to plant the cuttings on a warm border in the open. The best way of doing this is to cut a niche 4 inches deep with a spade, then put in some road grit or sand, an inch thick, to receive the base of the cuttings. Let the rows be 1 foot apart, and the cuttings 3 inches asunder in the rows. Press the cuttings firmly into the sand so that they may have a firm bed on which to rest, and then press the earth firmly with the feet about them, so as to securely fix them in the soil.

In securing the cuttings, no attempt should be made to prune the Roses, but on most established plants there will be long shoots, which, as before suggested, may be advantageously reduced in length. It is from this surplus growth that any number of cuttings may be obtained, and, as has been already stated, it will do the plants no harm if these long shoots are shortened back to within 6 inches of where they will have to be cut back to in spring from the hardest of the shoots. Thus obtained, the cuttings may be made, rejecting the soft tops, as they will be sure to die. For this purpose, a rather long cutting is desirable, as it enables the operator to fix it more securely in the soil than a short one. As nearly as possible, every cutting should be 8 inches long. It is not of much importance whether they have leaves on them or not; although, if they can have two or three leaves above ground, they will be likely to form roots sooner than such as have none.

I find that when the cuttings are put in at this time, whether under glass or in the open, it is best to let them stand one year before being moved, as by that time they will have made a sufficient number of roots to bear removal with safety. Some like to take them up in spring just as they have formed a callus, and pot and place them in heat; but unless they can be dealt with in a careful manner, great risk of losing many of them will be incurred. Those put in frames will require an occasional watering as spring advances, and the lights should be tilted in warm weather to admit air. At the end of May the lights may be removed altogether, and as summer advances many of them will begin to grow vigorously. The strongest may have their tops cut off when they have reached a height of 18 inches. If left to themselves, some will flower during the summer; but if strong plants are wanted, they should not be allowed to do so. By the time they have been twelve months in the ground they will be ready for potting, or for any other purpose for which they may be required.

J. C. C.

Gumming Roses.—The letter of the honorary secretaries of the National Rose Society upon gumming Roses (p. 430) is by no means satisfactory. They say that the committee "expressed no opinion upon the practice of gumming Rose blooms," but they altogether ignore the fact that this was exactly what they were asked to do. They were distinctly asked either "to approve or

condemn the practice," and they improperly gave a "decision" in favour of this newest form of trickery. They did this, it seems, because they had no law to guide them in the matter. "No law, forsooth!" Why, our schedule, a copy of which was sent to them with our case, has the following rule printed in large type: "Roses to be shown as cut from the plants." If this rule does not apply, it must follow that Roses may be cut from the plants with their centres full of gum! As it is evidently their intention to frame some rule for future guidance, their "decision" seems as ridiculous as that of the intelligent jury who returned a verdict of "not guilty, but don't do it again."—A. JOHNSON, *Hon. Sec., Leek Rose Society.*

STANDARD ROSES.

THESE with me often die, and I think the cause may in a great measure be traced to the conditions under which they are grown, although it is not an easy matter always to say what will suit them, and what will not. I have, I may say, almost given up planting standards, because I cannot keep them alive more than five or six years, and many die even in less time than that; yet Roses on their own roots and on the Manetti and seedling Brier do fairly well in our soil, and promise to last a lifetime. Thirteen years ago I planted a line of standards, and at the same time I put several in a large unheated house. Those in the open were all dead at the end of six years; but those under glass are in the most luxuriant health. It therefore appears that glass protection is all that is necessary to secure their thriving. That my experience is somewhat exceptional I am prepared to admit, for there is no county in England where Roses thrive better in the open, as a rule, than in Somerset. A walk through any of our country villages at the end of June will prove this. Our cottagers generally are great growers of Roses, and standards with heads 2 feet through, and stems nearly as large as one's wrist, are not uncommon. At the same time the number of varieties to be found in this condition is not great. Aimée Vibert is the variety of Rose most frequently met with. Anna Alexieff, Maréchal Vaillant, Mdme. Laffay, Jules Margottin, Duc de Rohan, Mdme. Domage, Acidalie, Souvenir de la Malmaison, and Gloire de Dijon are frequently seen in a thriving condition. These sorts are known for the most part to be good growers, and therefore likely to do well under any conditions; but I cannot help thinking that the let-alone sort of treatment which they get has something to do with the matter. In the first place, the cottager brings home the Brier and buds it where planted, and there it is allowed to remain; therefore there is no mutilating the roots. Then there is a sort of chance about the tree being pruned, and if pruned at all, not so severely as the professional gardener would do it. This sort of treatment, I believe, is much more conducive, in the case of the Rose, to a long life than that accorded to it by professional growers. The behaviour of the plants generally clearly shows that all the varieties of Roses are not suitable for standards. The weakly growers are the first to die, but whether this is the result of weak root action or the changed conditions under which they are grown, is not quite clear. I am inclined, however, to think that both have something to do with the matter. The sort of weak root action I mean is caused by, first, the Brier being torn from its bed and then mutilated to suit the fastidious taste of the grower; then it is further weakened by being removed from the nursery and taken to some distant place; and, further, the annual hard pruning which the branches receive only aggravates the evil. In a word, I believe we prune both top and bottom too much. I have noticed in many cases that the stock dies upwards. This may be caused by one of two things—either the stock is hide-bound and cannot expand, so as to maintain a healthy action between roots and branches, or it resents the artificial conditions under which we endeavour to make it grow. This is by no means unreasonable, seeing that many Briers are taken from warm and

sheltered situations; and it is not at all improbable that their energies are so crippled by exposure that they dwindle away and die when exposed to the sudden changes of an open position, and no doubt the restricted conditions under which they are cultivated are in part answerable for the difficulty experienced in making them grow.

TAUNTON.

PLANTING ROSES.

ONE sees so many half-starved Rose trees about the country that one wonders how their owners can bear to look upon them. This condition is often brought about by an indifferent preparation of the soil when the trees are first planted. Rose trees to be grown in beds or borders require the soil to be trenched to a depth of at least 18 inches or 2 feet. It will depend entirely upon its character what additions will be required to make it suitable for the growth of Roses. If a suitable loam, a good dressing of farmyard manure is all that will be needed; but if light and sandy, or inclining to be peaty, half of it should be taken away, and a strong heavy loam should be well mixed up with the remainder.

DWARF ROSES require quite as good soil as standards, but they do not always get it, which is a mistake, as the dwarfs, as a rule, live longer than standards. The question of getting fresh soil is, I know, often a serious one, but if no better is to be had, the roadsides in country places will furnish very good material if got together and laid in a heap for a few months. I have seen very satisfactory beds of Roses grown in such a soil; the grit which it usually contains suits them, and their growth is not so succulent as that made in a stronger soil.

ISOLATED STANDARDS are not to be recommended unless a position can be specially made for them. Where the soil is poor a hole 2 feet wide and 13 inches deep should be provided for each plant, and the soil ought to consist of three parts loam and one part rotten manure. Such manipulation need not, however, in all cases be insisted on, because there are many gardens in which the soil is quite good enough to grow Roses in a fairly satisfactory manner without any preparation except an application of manure before planting, *i.e.*, provided always that the ground is trenched deeply and the position not close to the roots of trees. Roses are really not fastidious as regards soil, and those who do not require flowers for exhibition may often get all they want without an extravagant outlay. What I dislike is Roses in places where the soil is as hard as a public highway and also about as poor, and the owner complaining that his Roses do not grow. There is really no art in growing Roses to suit ordinary purposes if people will only give the branches a position where they can obtain light and the roots sufficient food and moisture. If the branches are crowded and the ground over the roots cropped with other plants, failure wholly or partially will be the result. It is a mystery to me how people in many cases expect their Roses to thrive. I have in my time seen long borders prepared in the most elaborate manner, the best standard Roses secured from the most trustworthy sources and planted with the greatest care in the autumn, and in the following summer every available foot of ground between them has been planted with bedding plants, as if put in on purpose to suck out the nourishment which the Roses ought to have had. One feels almost inclined to condemn such treatment as irrational. In dealing with other subjects, cultivators generally are satisfied with one crop at a time, and why should not the same treatment be accorded to Roses?

DRAINING AND PLANTING.—Drainage is unnecessary, except in very wet soils or in low-lying situations; whether necessary or not, however, can only be determined on the spot. Of one thing we may be sure, and that is that the trees will not thrive in a water-logged soil for many years, and where drainage is necessary it should be thoroughly well done. In not very serious cases the drainage may be dispensed with by raising the

beds about 9 inches above the surrounding level. As to planting, if we could always reckon on a mild winter, I should always recommend it to be done early in November, but as severe frost is liable to injure newly planted Roses as well as other kinds, it is best to defer such work in very exposed places until the first week in February, and if it must be done before that time, it will afford the branches some protection if a wisp of dry Fern is securely fixed amongst them. When possible, the planting should be done when the soil is moderately dry, in order that the soil may be firmly trodden about the roots without its working into a paste. Firmly fixing the roots in the earth is a matter of the greatest importance; so also is the staking of standards directly they are planted, for much mischief may be done if the heads are not made secure. We always put a short stake, even to dwarf plants; if this is not done, the wind rocks them about more than is good for them.

MULCHING newly planted Roses helps to quickly establish them by keeping the roots in a more uniform temperature. The best mulching material is a thick layer of half-rotten manure spread on the surface over the roots and allowed to remain there all winter. If what remains in spring can be left during the summer, it will be all the better for the Roses. J. C. C.

FLOWER GARDEN.

DAFFODIL NOTES.

N. BICOLOR HORSEFIELDI.—I have myself little doubt that the parentage of this Daffodil is what Mr. Brockbank, supported by the testimony of the late Mr. E. K. Norris, thinks it to have been, viz., *N. bicolor* × *N. pseudo-Narcissus*. If the "fine seed pod" on *N. bicolor* had not come from a purposely hybridised flower, Horsefield would probably not have paid such careful attention to it as he did, for self-fertilised or chance-fertilised pods of *N. bicolor* are common enough—at least such is my own experience. Here *N. bicolor* is a sure seed-bearer, and I have at the present time many young seedlings from it. The internal evidence, too, viz., that afforded by the plant itself, is to my mind strongly in favour of the alleged impregnation of *N. bicolor* with pollen from a fine form of *N. pseudo-Narcissus*. *N. Horsefieldi* presents in all points the blended characteristics of these two plants. With the sturdy upright growth and substantial flower of *N. bicolor* it combines the vigour in blooming and increasing of the wild Daffodil. And I think that those who have looked long and carefully at Daffodils will agree with me that the shape and bearing of the blossom of *N. Horsefieldi* is suggestive of a magnified *Lent Lily*, though with the additional whiteness of perianth and solidity of *N. bicolor* of Haworth. There are several lesser particulars which might be dwelt upon as additional proof of this parentage.

N. INCOMPARABILIS SIR WATKIN.—"Veronica" (p. 378) opposes, but does not bring a syllable of evidence against Mr. Brockbank's opinion as to the identification of this variety. Mr. Brockbank's investigation of its history (pp. 362–394) is most interesting, and his conclusions seem to be well upheld by facts. He raises the question, "How did this fine Daffodil become wild?" and says it is commonly believed to have been brought from Portugal. Will he kindly refer me to the evidence, if there is any, of its importation? The question of the "wildness" of British Daffodils is an interesting one. For my own part, I am disposed to think that botanists have now gone too far in assigning a foreign origin to certain of our plants—Daffodils among them. There was, no doubt, a time of credulity when plants were recorded in books and magazines as native which we know now could not possibly be such. But the reaction against these mistakes has gone too far. Personally, I feel a good deal staggered at the notion of *N. incomparabilis*, and *N. incomparabilis* Sir Watkin in particular, being native; yet I am somewhat decidedly of opinion

that *N. biflorus* may be so, constantly as this has been denied, and should hold out obstinately against the theory that "our native *Lent Lily*" is an alien after all. And what proof have we that Tenby is a Spanish Daffodil (p. 394), or, I should rather say, a Daffodil peculiar to Spain? It may occur in Spain, and I have myself seen a Pyrenean yellow Daffodil a good deal like it, though smaller. But, on the other hand, I have seen forms of *N. pseudo-Narcissus* from Kent and elsewhere which are evidently connecting links between the common wild type and Tenby. It is probable that with a little trouble we might collect for the next conference a series of *N. pseudo-Narcissus* advancing from a large-perianthed bicolor form (such as prevails in my neighbourhood) to the small golden Tenby with reduced segments. No theory of the geographical distribution of plants has conclusively set aside the claim of the *Narcissus* family to have truly native representatives in our islands. The case of certain insects is analogous to that of the Daffodils. For a long time entomologists were over-hasty in setting down any insect as British which happened to be seen alive in the country once or twice. Then the reaction against this error ran into extremes, and whenever such a butterfly as, e.g., the Camberwell Beauty, appeared, it was pronounced to be an exclusively Continental species, and only "blown over" here. Now this insect is believed by all good authorities to be really indigenous, but existing here only under difficulties since the separation of our islands from the Continent. So it may be with the Daffodils. Under former conditions of climate, &c., before certain geological changes came about, there may have flourished in our meadows and on our hills Daffodils of which some are now lost to us as wild flowers, but some, as, e.g., *N. biflorus*, and possibly even *N. incomparabilis*, may still linger here and there where the local conditions of situation and climate are congenial to them. It is of course difficult to prove that any plant is really an "original inhabitant." But it seems to me quite as scientific to say that such Daffodils as these may possibly be truly indigenous survivals as to deny that such a plant as our common *Lent Lily* is a native on the grounds of some cut-and-dried-and-only-half-worked-out theory of geographical distribution. G. H. ENGLEHEART.

Appleshaw, Andover.

SHORT NOTES.—FLOWER.

Linaria anticaria.—The delicate beauty of this little flower recommends it to all lovers of beautiful alpinæ. It is still (November 10) flowering in perfect condition on a sheltered rocky. It should be sown yearly, for though it is a perennial, it is one of those whose lives are short and somewhat precarious.—G. J.

Polygonum vaccinifolium.—Among our latest autumn rock beauties this cannot be too highly praised. Through the summer its slender trailing stems have a somewhat bare and unfurnished look, and every autumn it is a renewed surprise to see the crowds of little pink spires coming into beauty in October and enduring till near the middle of November. It is beautiful among mossy stones.—G. J.

The Black Bryony in the garden.—At Ightham we saw this native plant very brilliant, running for 12 feet or so up one side of the house, with its fine coral berries. Our native plants should not be quite neglected in our gardens; familiarity should not breed contempt in their case, and among our native plants there are not a few beautiful ones. Some of our native plants grown in gardens would scarcely be suspected of being indigenous by the ordinary observer.

Salvia Pitcheri.—I notice Mr. Bedford's remarks (p. 392) concerning this *Salvia*, but I cannot act upon his suggestion in regard to forwarding a specimen to THE GARDEN OFFICE. I have left Broadlands, from which last year, as foreman, I wrote; but doubtless should this catch the eye of Mr. Shirley, the head gardener there, and his plants of this *Salvia* are in bloom, he will have much pleasure in forwarding a spike for decision.—JAMES MAYNE, *Penitence Castle, St. Mellion, Cornwall.*

Tigridia Pavonia.—This grows most luxuriantly here; we have some with stems 3 feet 6 inches long, half an inch in diameter at the joint, and more than three-eighths of an inch in diameter at other places. A stem taken from the inside of a bed measured 3 feet 9 inches long, and one of its leaves measured exactly 2 feet 6 inches from base to tip. How fine the flowers were from such growth may be imagined; of course the slight bottom-heat which the plants had had much to do with it.—JOHN GARLAND, *Kilberton, Exeter.*

* Some stems and leaves sent by Mr. Garland fully bore out these statements.—ED.

AURICULA COLONEL CHAMPNEYS.

WHEN I wrote the strictures on "Delta's" condemnation of this *Auricula*, which appeared in THE GARDEN (p. 341), it was only to lift it off the "rubbish heap" on to which he had so contemptuously thrown it. I did not mean thereby to raise it to the proud position of a perfect *Auricula*. Even Mr. Tymons of taste severe admits that he would not relegate it to the rubbish heap. Then Mr. Douglas, perhaps as severe a judge of *Auriculas* as is in England, commends it. Then "J. M." disposes of Mr. Tymons' statement that it is never seen in a winning set by taking him to the "law and the testimony," and adds other evidence that it is a good flower. Then follows Mr. Horner supporting the descriptions of "Delta" and Mr. Tymons, but mentioning only Frank Simonite (among known flowers) as surpassing it in its sub-class. This I also mentioned. Mr. Horner also names Aurora and Heather Bell and another, "only a memory," as being superior, but as these are not known flowers in the wider sense of the word they can scarcely be taken into account. Indeed, Mr. Simonite does not have them on his printed list, so that so far as outside growers are concerned they may be not a memory, but a dream. The pace must be "killing" if in every two years every *Auricula* is out distanced. I fancy from Mr. Horner's tone that we are on the eve of a volcanic eruption in the *Auricula* world, and that at the next two shows we will see "something never seen before." They will need to be ahead of Sapphire (a warning word to Mr. Horner).

A parting explanation to "Delta." I have not the advantage of Mr. Tymons and Mr. Douglas of knowing him, but, putting the error (I did not know it was a printer's) in the name and the contempt with which he wrote of "my friend the Colonel" together, I could not help thinking that he did not know *Auriculas*. W. S. B.

Salvia Horminum violacea.—This is certainly a very interesting plant for the mixed border, and I am not sure that it would not make a very pretty small bed; at any rate it will be sure to attract attention, not only for the length of time during which it continues to maintain a cheerful look, but for its somewhat strange appearance, arising from the tops of the growth having four or five pairs of purple bracts. What makes it more remarkable, too, every shoot has these bracts, and the plants are constantly pushing up fresh shoots, so that as soon as one or two fades there are others to take their place. Our plants of this *Salvia* commenced to show these bracts in the beginning of July, and the number has gone on increasing till now they are more attractive than earlier in the year. Our stock was raised from seed sown last February. This *Salvia* has all the appearance of being a herbaceous plant, and if so it will probably prove to be hardy. Whether hardy, however, or not is not of much consequence, for treated as an annual it answers admirably. I may mention that it grows about 15 inches in height and is rather spreading in habit, but the growth requires no support. It is very distinct from all the better known forms of *Salvia*.—J. C. C.

Hardy Chrysanthemums.—For quite two months past my garden has been gay with outdoor Chrysanthemums, beginning with the so-called "summer" ones and following on with pompones, the new early Japanese, and various reflexed sorts. I venture to say that with a sufficient knowledge of the best outdoor varieties of Chrysanthemums the hardy flower garden may be as bright now as at any time of the year. The early Japanese varieties are a great gain, for they are not so stiff as the pompones or reflexed sorts, and they supply fresh tints of red. I believe that the beautiful new single sorts, such as Oscar Wilde, Patience, and Æsthetic, will probably be found to do well in the open air, where they will add a fresh charm to the garden. I write this on returning from a Chrysanthemum show, where I was surprised to see that the old "florist" notions are still in the ascendancy.

Plants tied and bent and pinched till they are in the exact shape of an inverted Cabbage, and with blobs of white or yellow placed over them at exactly regular intervals, evidently formed the judges' canon of beauty. In cut flowers the monstrous incurved specimens, marvels of horticultural skill no doubt, but about as beautiful as a freshly curled wig, or the really graceful Japanese sorts with all their beauty twisted out of them and as carefully combed out as a pet poodle's hair—these floral abortions still seem to be admired. The labour bestowed upon them seems worse than wasted

shades of colour, surmounted by spikes of crimson, scarlet, orange, and yellow flowers; they are the most useful plants we possess for imparting a sub-tropical aspect to the garden. If all the members of the family are not hardy, there are a number of sorts which can be left out in the open air all the winter with impunity by covering the roots with some light material, the old stems and leaves being quite sufficient in ordinary seasons. But in the case of cold, wet soils it is but to lift and store the roots in a cold cellar or a shed, where they can be kept away from the frosts and remain

ably fine and striking trusses of flower can be seen on the plants.—N. D.

Ampelopsis Veitchi.—All who delight to see richly coloured leaves in autumn should plant this. It is a Virginian Creeper, which clings to wood or stone with the tenacity of the strongest Ivy, and there is no kind of foliage with which I am acquainted that assumes such a bright colour in October and November. Its leaves are like the brightest of our scarlet Pelargonium flowers, and I am sure if your readers could see this creeper, as I did the other day, against the wall of the residence of Mr. T. M. Franklin, at St. Hilary, in Glamorganshire, it would be planted extensively this winter.—CAMBRIAN.

Argemone grandiflora.—I am forcibly reminded by the illustration of *Romneya Coulteri* in THE GARDEN of Nov. 8 of a plant of *Argemone grandiflora* which has bloomed in my garden here during the past summer. I raised it originally from seed, and it survived out of doors throughout last winter, but it did not bloom last year. The bloom, though not so large as that figured in THE GARDEN, is of the same shape and delicate texture with a centre of yellow stamens, and the buds are similar. The foliage is glaucous and streaked with white, and my plant grew about 2½ feet high. I find the seed mentioned in few catalogues; indeed, I have come across it only in that of Biddle & Co., Loughboro' (from whom I procured it), and in an old one of Henderson & Co., St. John's Wood.—W. J. T., *Brixton*.

Early Violets (Marguerite de Savoie).—Going through the gardens at Sunning Hill to-day, I was greatly struck with two beds against a south wall, a perfect mass of bloom, especially when I remembered seeing in one of your contemporaries lately directions for successful culture in frames in November. The method of culture was briefly to strike cuttings the first week in April on a slight hotbed; transplant into a richly-prepared bed in May, sunny aspect, and with the plants not less than 12 inches asunder; hoe and stir between, with an occasional dusting of soot or soot water, a sure antidote against red spider. In a rich deep soil no watering is required. There is no better deep blue Violet than this, and I understand it came here originally from Swanley. Bunches of it can be gathered here for months.—W. J. MURPHY, *Clonmel*.

Eremurus aurantiacus.—It seems that through a misconception on the part of the distributor of the above-named very ornamental hardy Indian Amaryllid and the botanical authorities consulted by him before he sent it out, and to whom he submitted specimens for naming, that a mistake has been made in the naming of the plant, which turns out to be in reality the species described by Boissier (the great authority on these plants) under the name of *E. Bungei*, which it must henceforth, of course, bear in all correctly named collections. It has been well figured by Dr. Regel in the last issued number of his *Gartenflora*, along with the real *E. aurantiacus* on same plate, which, however, seems to be merely a synonym for a pretty paler-flowered form of *E. Bungei*, with pale straw-coloured anthers in place of the conspicuous red ones appearing in the type form. The name given to this pale form by Boissier is *E. Bungei* var. *stenophyllus*.—W. E. GUMBLETON.

Beds of plants distinguished for beauty of foliage alone produce a pleasing effect in the open air, especially when the season happens to be a warm one. One of the prettiest beds I ever saw was this year in Mr. Dobree's garden at Byfleet. It was composed mainly of Castor-oid plants, variegated Maize, Cannas, and Perillas, allowed to grow at will with *Cineraria maritima* and *Echeveria secunda* glauca round the edge. In another part of the garden was the usual bedding-out arrangement, i.e., a number of small beds planted in orthodox manner, but I thought this group of fine-leaved plants more than worth the whole of the display afforded by them, an opinion which Mr. Kirk informed me was shared by his employers, who considered it the prettiest bed in the garden.



Chrysanthemum maximum; flowers white, natural size (see p. 441).

when compared with the beauty that the plants and flowers would show if left alone. As it is, I saw nothing at our local exhibition to compare with the beauty of a wayside cottage garden near here with three or four large masses of various coloured pompones which had been left to Nature; or than our old almshouses, over the walls of which the inmates have nailed old-fashioned Chrysanthemums, which lighten up the old red brick of the "harbour of refuge" and make a really beautiful floral display.—R.

Cannas.—One sometimes wonders if these plants are valued as they deserve to be. They represent a stately genus of ornamental foliaged plants, having broad massive foliage of various

until the spring, when they may be replanted. There are many varieties; one of the most striking is *C. iridiflora* or *Ehemanni*, truly a splendid plant, and bearing huge bunches or spikes of, say, seven or eight vivid crimson flowers. Now this is a fine subject to grow in pots. The roots can be divided in February, if necessary, and potted singly into 6-inch pots, placed in a little heat, then grown on in a Fern house until they are shifted into 12-inch pots, then kept growing in a warm house. To grow it successfully it should have stove treatment, plenty of heat, moisture, and feeding. It is a fine subject for a warm conservatory when in flower. There is a bed of this in the Chiswick garden of the Royal Horticultural Society, and some remark-

In some gardens, notably at Hampton Court, fine-leaved plants are used with admirable effect in conjunction with the ordinary bedders, breaking up the flat surface which the latter more or less produce.—J. CORNHILL.

TREES AND SHRUBS.

TREE COLOUR IN 1884.

EVERYONE who has seen our country this year, when viewing the landscapes or woods, must have been struck with the splendid beauty of the foliage. It is the fashion to speak of American trees as being remarkable in colour; but our own impression is that our native trees are often quite as good, and, in addition, we can have American kinds if we choose to plant them. We went from London to the west of England on October 18, and about that time the difficulty was not to find the best plants in colour of foliage, but what hardy tree or bush had not a good colour! We went to the south side of the North Downs, a long way by road, on November 2, and there the colour, though a little more mature, was no less fine, notwithstanding some previous rains and storms. Even the common Hawthorn was often beautiful in colour in the hedgerows in Gloucestershire, the field Maple being also particularly good. And some herbaceous plants were very remarkable; but these are planted in such small quantities, that they would not tell like important trees. We may, however, mention the large Japan Plantain Lily, *Funkia Sieboldi*, and the common Solomon's Seal as being really good and distinct in colour. Lord Moreton showed us trees of the wild Cherry in Tortworth Park which had as good a colour as the Liquidambar. Among the pure clear yellows, the best tree we saw was the Golden Ash at Mr. Gambier Parry's, at Highnam, in Gloucestershire. The vine foliage in the west country had not, at the time, assumed a good colour; but in Surrey, early in November, the foliage of the Vine on the cottages was often of a beautiful colour, thereby adding to the reasons for treating the Vine as an ornamental plant. The curious way the Elms around Berkeley Castle—and we believe everywhere else—showed clouds of gold here and there on a rich green tree was beautiful. The Limes were splendid in colour in many places; the common garden Azaleas intense in their reds. There is no end to the beautiful effects one may produce in most seasons with careful planting, and all we have to urge about the matter is, that colour is best got by grouping and massing, instead of by the ordinary dottings or mixing principle. We shall never know what colour means in our landscapes and parks until there is a revolution in our ways of planting both forest and park. The true way is to adapt the tree to the soil, and grow one thing in a place as a rule, that place being the best fitted for it. The tree that surprised us most by its beauty of colour during the present autumn is the Wild Service (*Pyrus torminalis*), of which a tree at Lady Donaldson's near Pangbourne was very beautiful and most effective in colour.—*Field*.

TREE LEAVES AND THEIR USES.

JUST behind the garden here there is an Oak wood, consisting of about 800 acres, from which we collect about this time an unlimited quantity of leaves, but all cultivators are not so favourably circumstanced as regards getting leaves—a matter for regret—few materials being more useful in a garden than tree leaves, both fresh and decayed. They may be used in many ways with much advantage. Nothing equals them for making up beds in which to plunge Pine-apple plants. If beds 3 feet or 4 feet deep are filled with them now or any time during the winter, they will remain fresh and retain a genial warmth for upwards of twelve months. In order that they may last as long as possible, it is, however, important that they be collected and stored while quite dry. In that condition they always last longest. Wet leaves heat violently when massed together and

soon begin to decay. I would never put wet leaves in the bottom of a bed if I could help it, but they might go on the top, where they could be easily renewed. At one time we had to bring tan a distance of eight miles for the Pine beds, but we soon got tired of that, as the heat produced by the tan was more fluctuating and not so lasting as that from leaves; when the tan was spent, too, we regarded it as worse than useless, and blamed it for producing fungi when thrown on the quarters of the kitchen garden. The right way would probably be to burn it and to use the ashes, but even then it would hardly pay for the labour bestowed on it. Besides leaves being useful for Pines, there are no kinds of beds which they do not benefit. Hotbeds for early vegetables never fail to meet their requirements if composed of one-half or three parts of tree leaves; and where pits and frames have to be filled up with slightly fermenting material, leaves will be found to be of the utmost service. A layer of them makes an excellent bed on which to place Melon and Cucumber mounds in pits, and we have used quantities of them in forming Mushroom beds, mixing them with the droppings when short straw in them was deficient and when they were liable to lie too close. Just now, when Rhubarb, Seakale, and Asparagus are being put under glass for forcing, a bed of leaves, whether in house, pit, or shed, will give them a gentle start and bring forth well-flavoured produce. Hot manure alone in such cases sometimes smells badly, ferments, and not unfrequently imparts a disagreeable flavour to the tender growths, but leaves never do this; moreover, their usefulness does not end here.

WHEN ROTTED down so that they may be put through the meshes of a quarter-inch sieve, they are still useful as ever. Indeed, to many who do not require hotbeds they are more useful in a decayed state than fresh, and we frequently hear people, especially those living near towns, where leaf-soil is not easily to be had, express a wish that they had some of our leaf-mould. Sometimes wonder it is not offered at so much per cwt. like peat and sand, as in propagating material and in that for potting young plants it is as useful as either sand or peat. When mixed with the right proportion of sand there is no better mixture in which to root all kinds of soft-wooded plants than one in which leaf-mould forms a part, and it may be used in the subsequent potting mixture while the roots are young and tender. When made in large quantities, such as that resulting from some scores of loads of leaves emptied into houses or pits, it may be used in flower beds and in the kitchen garden with advantage to many crops. Potatoes turn out of leaf-mould clean and bright, but, as a rule, it is not very rich, and those who depend on it alone to produce a heavy and superior crop might be disappointed. When mixed, however, with artificial or ordinary manure of a strong character, it plays its part well. It will always induce abundance of fresh fibrous roots if other material is supplied to feed them. There is just a possibility, however, of using leaf-soil too freely. When this happens the soil is not so productive as when less is used; but no one can do wrong in putting it freely on heavy, cold soils and trenching it well down. In spring we generally sift a large quantity of it and mix it with old potting-shed soil and scraps of different kinds—material which makes a good covering for vegetable or flower seeds during the sowing season; young seedlings, too, luxuriate in it. When hotbeds are made up with half manure and half leaves they ultimately make a good mixture in which to grow vegetables, but for propagating and potting choice things we dislike soil which results from leaves rotted in large heaps or hotbeds, and prefer nice mellow material, the produce of leaves that decay naturally and without having been put into heaps or fermented.

THE BEST OF ALL LEAF SOIL for propagating and similar purposes is that which has decayed under trees in a thin layer on the surface of the ground. This is always fresh, and has none of that worn-out look about it which may be observed

in the case of old hotbed soil. The leaves of Beech and Oak are best, as they do not decay so fast as those of the Elm, Lime, and other soft-leaved trees. Beech and Oak leaves should alone be collected where they can be had in sufficient quantities, but where deficient, other kinds must be taken, as any kind of leaf-soil is better than none. The fresher they can all be kept the better. For beds in spring or summer for Melons and Cucumbers it would be a great disadvantage to have them by that time half or three parts decayed. Last winter we stored many cartloads of leaves in a shed when perfectly dry, and in six months afterwards they turned out as fresh as the day on which they were put in. We would always, if possible, store a quantity away in a shed to keep for late use, and these should consist of the best leaves; the soft ones should be collected together for immediate use. They may be stored in the manure or rubbish ground, and they keep better in sharp ridges than in one great heap, but this depends a good deal on the state they are in when stored; if wet they will soon begin to decay. It should be so arranged that all leaf beds may be wholly renewed about the time when the leaves can be collected. They can then be taken straight to the beds when fresh and dry. J. MUIR.

TREE PÆONIES.

BEING desirous of knowing how far it was possible to succeed with Tree Pæonies in this country, I have been searching through various books and papers wherever I thought the information I wanted might be found. Almost the first note I came across was the following: "I have a Tree Pæony on my lawn which has now on it about 200 blossoms. It is nearly 30 feet round, and has not had any protection for years. It was almost as large some years since, but the frost cut it down and left only the stool, which is now about as large as a man's thigh." I was not a little surprised at this statement, for my experience of P. Moutan was of a not very satisfactory character. Further enquiry only tended to show me how ignorant I had been of the real nature and requirements of Tree Pæonies, for I found abundant testimony to their hardness and massive beauty when treated properly. It may be that I am unacquainted with good, well-managed collections of these plants, because I have never had the good luck to go where they are in favour. We know that in many Continental gardens P. Moutan is to be found in as great variety and abundance as the herbaceous Pæonies are fast becoming with us; but so far as I can glean, the shrubby species are but rarely met with in English gardens. Allow me, therefore, to make a few observations in reference to the management of Tree Pæonies in the hope that they may prove of some use to those who, like myself, are desirous to possess a collection of these plants, as well as to those who are on the out-look for good things for the outdoor garden. That

P. MOUTAN AND ITS VARIETIES are hardy enough to be treated as outdoor plants appears to be proved beyond all question, and that the gorgeous beauty and large size of their freely-borne flowers render them of quite extraordinary merit for garden purposes will be admitted by all who know anything about them. It is reported that "one of the largest Tree Pæonies within ten miles of London stood in the grounds of Spring Grove, where it was planted by Sir Joseph Banks. It was 6 feet or 8 feet high, and formed a bush 8 feet in diameter in 1825. South of London there are equally large plants at Rook's Nest, near Godstone, Surrey, which were planted in 1818. North of London the largest plant in the country is at the seat of Sir Abraham Hume at Wormleybury, in Hertfordshire. It is 7 feet high, and forms a bush 14 feet in diameter, after having been planted thirty years. In the year 1835 this plant perfected 320 flowers, but it has been known to bear three times that number." In the spring of 1853 a severe frost, which injured Laurels and Aucubas, proved harmless to a collection of Tree Pæonies which at that time existed in the Chiswick Gardens. The severe frosts of recent years also proved the

hardiness of these plants in the few gardens where they are still grown. According to Fortune (who ought to be an authority in this matter, seeing that he did a great deal towards introducing and popularising Tree Pæonies), a hard winter is conducive to their health, providing that the summer previous was warm and moist. Loudon says they prefer an open situation for the proper maturing of their wood, but recommends protection from cold spring winds, not so much to prevent their injury during winter as to protect the tender leaves and flowers when they first appear. Mr. Curtis found that by giving the plants no protection whatever they flowered somewhat later, and the experience of others goes to prove that protection to the plant itself had the opposite effect to what was intended, because of its tendency to make the plant delicate and much more susceptible to cold than when left unprotected.

THE SOIL preferred by the Pæonies is a strong, deep loam, in which their thick fleshy roots seem to go down to a great depth. Moisture is also preferred, especially during the summer months, when the plants are making their growth. It appears that the first plant of P. Moutan was brought to England in 1787, Sir Joseph Banks, who learnt of the existence of this plant in Chinese gardens through a collection of drawings, exerting himself to obtain a specimen of it for the Kew collection, where it first appeared in cultivation. Notwithstanding this early introduction it appears very little indeed has been done to extend the cultivation of Tree Pæonies. Fortune's plants were for some years in the Chiswick Gardens, but we learn that owing to mismanagement these never arrived at the perfection they were known to attain in the gardens of the Chinese. In 1864 Mr. Bateman surprised the gardening world by exhibiting at Chiswick a splendid collection of the blooms of P. Moutan, which had been produced by plants growing in his garden at Biddulph Grange. Shortly afterwards he presented his plants to the Horticultural Society for their garden at South Kensington, but, according to Fortune, they were soon destroyed by giving them too much protection in winter. I have met with several records of large specimens which existed, and perhaps still exist in a few English gardens at the present time, but unfortunately they are very few indeed. Fortune, Loudon, Messrs. Standish and Noble, and others have proved how easily these Tree Pæonies may be propagated by grafting shoots of them on to the stout, fleshy roots of the herbaceous kinds or on the roots of P. Moutan, and at the present time I find several English nurserymen are offering them in quantity for pot culture, so that there appears to be no difficulty in obtaining a good supply of plants. P. Moutan appears to vary very much both in the size, doubleness, and markings of its flowers. When first introduced the varieties were mostly light coloured—white, blush, or pink; the petals were somewhat ragged at the edges, and were rather too few in number to fill out the flowers well. Since that time, however, great improvements have been brought about by the few who have continued to cultivate these plants. Mr. Bateman's plants, alluded to above, bore flowers both brilliant and varied in colours, and were possessed of a beauty "which surpasseth the Dahlia and the Hollyhock in gaudy splendour." One of the first to appear of these fine varieties was Gloria Belgarm, which was raised in Belgium, and which was pronounced "a marvel among marvels," the flowers being of the deepest rose colour, nearly full double, and more than a foot in diameter, or about 4 feet round. Souvenir de Gand is another grand variety. It would be difficult to imagine a more gorgeous picture than would be presented by a specimen of either of these two varieties, with a diameter of 10 feet, and bearing 200 blooms each as large as a Victoria regia flower; and that this is not an impossibility we have shown in what was accomplished in the garden of Sir A. Hume fifty years ago. In Andrews' "Botanical Repository" there is a figure of a variety with single white flowers, except that at the base of each petal there is a

large blotch of deep crimson. This flower is a foot in diameter, and looks like an immense Poppy.

IN DESCRIPTIVE CATALOGUES we find white, rose, pink, red, red-violet, lilac, and bicoloured varieties offered, some single, others semi-double, and again others with flowers as compact and full as a double Dahlia. Here we have proof of the ornamental characters possessed by P. Moutan and its numerous forms, ornamental enough and varied enough to be in themselves a flower garden of the most dazzling and beautiful description. In the large share of attention now being paid to out-door gardening, and especially to ornamental trees and shrubs, it may be hoped that the Tree Pæonies will be allowed to take that prominent position which they are in every way qualified for. It has been well said that "if cultivators had only spent a little of the time in producing good out-door specimens of shrubs and trees that has in times past been spent in growing formal and distorted stove and greenhouse plants, &c., many of our gardens would have presented a different aspect from what they do at this time." Whether to such a cause may be attributed the neglect into which Tree Pæonies have been allowed to remain need not be discussed, but certainly it may be said that gardeners generally have hitherto been asleep to the first-rate qualities of P. Moutan and its varieties. B.

Wasps injuring Elm trees.—I think that if Mr. Nisbet (p. 374) will examine his Elm trees closely, he will find that the wasps were attracted to them by the sap oozing through burrows made by the Elm bark beetle (*Scolytus destructor*), which is very prevalent this year; at least, we find it to be so here. In the beginning of June this beetle, which is from 2 lines to 3 lines long, and of a black colour, begins boring into the inner bark, where it forms galleries from 2 inches to 3 inches long; along the sides of these are laid from 100 to 160 eggs. From these he will find the grubs, about this time turning into the pupæ state, at the end of their burrows, where they pass the winter, and come out as beetles about the end of May. This pest has destroyed several fine trees here from twenty-five to thirty years old. We are cutting down all trees that are badly infested, the bark of which is stripped off and burned. Those trees which are likely to recover will be watched in May and June, and means will be taken to exterminate the beetle if possible. It was quite a sight to see the large number of wasps that collected on the infested parts of the trees to devour the sap during the hot weather, and I think they eat the grubs also.—P. SHARP, *Claydon Park, Winslow, Bucks.*

BOOKS.

A DICTIONARY OF GARDENING.*

SINCE the appearance of Loudon's "Encyclopædia of Plants," the object of which was to give a historical and descriptive account of all plants cultivated in, or natives of, Britain, a vast number of plants of all kinds have been introduced into our gardens, and considerable changes in nomenclature, as well as in other botanical matters which concern horticulture, have been wrought. For present use, therefore, the value of Loudon's works is less than when they were first published. Many of the plants which he described have disappeared from our collections, and the information which he gave about those that still remain requires more or less modifying. Horticulture as a whole has greatly changed during the last half century or so. The cheapness of glass compared with what it was before the repeal of the glass duty may to some extent account for this, but we are inclined to attribute it more to increase of wealth among the middle classes and to the popularisation of science. Horticulture now engages the attention of almost everybody. It is gradually assuming an important place as a com-

mercial industry, and we have now hundreds of nurserymen where tens only existed half a century ago. The demand for plants and garden produce is so great, that many of the large private gardens which once ministered to the wants of a single household are now devoted to growing supplies for the public market, and are made self-supporting. The effect of all this has been to weed out from cultivated plants all those which were not sufficiently beautiful or useful to satisfy the popular taste, and to introduce a vast number of new kinds such as the public market seemed to require. In the literature devoted to gardening great strides have also been made since Loudon's time; in short, it may be said that never did horticulture occupy so important a position among the industries of Britain as it now does. Numerous books devoted to gardening of all kinds now appear annually, but until recently no serious attempt to arrange and describe all plants supposed to be now in cultivation in English gardens had appeared.

In the "Dictionary of Gardening" under notice an attempt is made to meet this want, and, so far as can be determined from the parts already issued, this book is likely to prove a valuable contribution to garden literature. The arrangement is alphabetical, and it purports to give an accurate description of every plant in cultivation, with references to figures in various botanical and gardening works, accompanied by numerous figures of the most striking and interesting plants. For the descriptions recourse has been had to numerous botanical works, such as floras, monographs, &c., so that the account given of each plant may in most cases be considered trustworthy. The characters of each genus are carefully defined, and where possible the derivations of the generic and specific names are given. We are not certain that all the plants enumerated in this work are, or ever have been, in cultivation in English or even European gardens, nor that every cultivated plant is herein included. To obtain sure information on these points in every case would involve immense labour; indeed it would be practically impossible to avoid errors in matters of this nature. Such errors are, however, of comparatively small importance. The figures, of which a liberal sprinkling runs through the book, have been gathered from all sorts of sources, and although they are not in every case as accurate as could be wished, they are generally characteristic enough to identify the plants by. The idea of interspersing the popular names alphabetically with the botanical ones is a good one, and in this respect the list appears to be dealt with as thoroughly as the rest of the work. The paper, type, and general get up of the book leave little to be desired, and it deserves to meet with success. Accuracy in points connected with nomenclature and description in an undertaking of this kind is of the first importance, and it is therefore satisfactory to know that this work is placed in reliable and trustworthy hands.

Cultural directions are given at the head of each genus, but these are not of a very high standard; in some cases, indeed, we should say they are apt to mislead. The amount of space devoted to them is quite disproportionate to their relative importance. For instance, four columns are devoted to the Auricula and about a quarter of a column to Azalea indica, whilst only five lines are given to Asters. In almost every case the cultural information is overburdened with the most elementary details, and is quite out of keeping with the rest of the book. It is, however, rather as a descriptive and historical list of cultivated plants than as a guide to their management that this work will prove useful. Comparing it with Loudon's "Encyclopædia" of Plants, we have in the former less information of a purely botanical character, but much more of that kind of useful knowledge which gardeners stand most in need of. W.

Agapanthus seedling.—I have just picked some perfectly ripe seed from a plant of the blue Agapanthus that has stood for several years in the open ground. I do not remember ever knowing this plant to ripen seed before in the open air.—J. C. C.

* "A Dictionary of Gardening." London: C. Upcott Gill, 170, Strand.

GARDEN FLORA.

PLATE 467.

CHRYSANTHEMUMS.

(WITH A COLOURED FIGURE OF *C. CORONARIUM*.)

ONLY a few years ago this beautiful Crown Daisy was scarcely ever seen outside of botanic gardens, but at last, with the decidedly improved tone of later fashion, it has become popular, and receives, to some extent, the attention which it so worthily merits. To my mind it was always beautiful, and before the Daisy-like flowers became popular, I used to think that this was one of the best of all plants for window boxes. Sometimes, of course, it is too tall, but where other window plants did not flourish I found this to do admirably. It seems to care little for drought or exposure. The accompanying plate faithfully represents the single white and pale yellow, and to my taste the single

*Chrysanthemum carinatum*.

forms are much the most lovely. There are double forms of these and they grow about 2½ feet high. *C. coronarium nanum* is comparatively a new strain, and it grows only about 1½ feet high, but I have not observed that any singles are offered. The colours are white and shades of yellow. It has been known as the African Daisy and Garland Chrysanthemum. Native of South Europe and North Africa. Introduced in 1629.

Other Annual Species.

C. CARINATUM (*C. tricolor*).—The tricolor Chrysanthemum in many of its varieties is extremely beautiful, and ranks among the finest of hardy annuals. It has great variety in colour, ranging from white to maroon-purple or crimson and yellow, and there are doubles of similar colours. The strain known as Burridgeanum is very fine and particularly handsome, and one of the forms is pure white, with a crimson circle round the disc. Dunnett's strain includes fine doubles of white, purple, and yellow. Lord Beaconsfield, distributed a few years ago, is an improved form of *venustum*, with maroon rays. A good selection

Drawn at Munstead, July 20.

may be made from almost any seed catalogue, and all may be accepted as beautiful. This species may be distinguished from *coronarium* by the scales of the involucre, which are keeled, as the name denotes. It was introduced in 1796, and is a native of North Africa.

C. MULTICAULE.—An annual, with apparently very beautiful yellow flowers. I have not grown it, but it is sometimes offered in seed catalogues, and as herbarium specimens promise so much from their appearance, I shall have it next year. It differs in habit from every other, the numerous branches, spread so immediately over the ground, taking their origin directly from the summit of the root. The leaves are finely divided, and the flower-heads have a diameter of about 1½ inches. Native of North Africa.

C. MYCONIS.—I received this from the south of Europe two years ago, but I think it is not nearly so well worth growing as *C. segetum*. It is decidedly distinct from these other annual kinds, as it is the only one among those now mentioned with undivided leaves. The latter are obovate or spatulate and serrated; the flower-heads resemble those of *C. segetum*, but this plant is not so neat in habit. Seeds under this name, distributed last spring as those of a probably good novelty, produced the next species. Native of South Europe and the Mediterranean region; introduced 1775.

C. SEGETUM (Corn Marigold).—There are those who seem to doubt whether a British plant can be admitted properly into the garden, but there are many I know who would not like to be without this pretty plant, which I understand has even become a favourite in Covent Garden. Single specimens are somewhat stately, the glaucous lacinated leaves are handsome, and the golden flower-heads, nearly 2 inches across, are decidedly showy. I have a flower before me now, in the middle of November, and flowers are to be had whenever in winter the weather continues mild for a little while. Mr. Wolley Dod, I think, says this plant is more than annual; with us it seems strictly annual, but we have from self-sown seeds, at all times, plants in every stage. It is said not to be a true native of Britain. In England it is not very common, but in Scotland, where it is called Goulands, I have seen whole fields a sheet of colour with it. The height is about 1 foot or 1½ feet, and it may be sown as *C. coronarium*, though generally, I think, young plants self-sown can be found for transplanting, and in moist weather it transplants very easily. Mr. B. S. Williams has distributed an improved strain as *grandiflorum*. Last spring I raised this from seeds distributed under the name *C. Myconis*, which I consider decidedly inferior. Native of Europe, North Africa, and West Asia.

CULTURE OF ANNUAL KINDS.—All these sorts are most valuable for culture out of doors, though, perhaps, there are no annuals more easily grown in pots. The seeds should be sown out-of-doors in September, March, and May, but we have always a number of self-sown seedlings, and now there are nice little self-sown plants that will bloom in the spring. The summer brings the finest flowers, but we have them during a considerable part of the year, even in winter when the weather is mild. As annuals are so often left too thick, it is necessary to reiterate that to have fine plants, thinning must be resorted to. These Chrysanthemums are bushy in habit, and the natural habit is always the best—to be attained only by giving sufficient room. There is another consideration, and it is that if annuals have the space they require, the season of blooming is longer and the flowers finer than when they are crowded. These Chrysanthemums need nothing more than good garden soil, and their culture is so easy that success must follow rational treatment. Pot culture we have not lately adopted, there being so many things to grow, but in winter the flowers are of great value. The simplest plan perhaps is to sow a few seeds early in September, thinly in the open ground, putting three in a 6-inch pot as soon as they are large enough, then to be placed under glass in a cold frame, according to the weather. For potting I think it worth while to

use a good sandy loam. If sown out of doors in a small bed, the seedlings are not so likely to be starved as if sown in pots, and as nice little

*Chrysanthemum Burridgeanum*.

plants 3 inches or 4 inches high lift easily with plenty of roots, the trouble of pricking off or re-potting may be avoided.

Hardy Perennials.

C. (PYRETHRUM) ALPINUM.—This is quite rare in cultivation, and I do not happen to know where

*Chrysanthemum (Pyrethrum) roseum*.

it can be found. Herbarium specimens show it to vary considerably, but it may be described generally as a small caespitose plant, with leaves pinnately divided or pectinately into narrow divi-



sions, bearing comparatively large, white, solitary flower-heads on stalks about 6 inches high. It has been confused with *C. arcticum*, with which it has nothing to do. As *C. alpinum* I have received a totally different plant, with leaves more than once divided, and flower-stems bearing about three flower-heads, which possibly is *C. arcticum* as figured in Loddiges' "Botanical Cabinet." It has been called *Leucanthemum alpinum*, but is rightly, no doubt, placed under *Pyrethrum* by De Candolle. Native of the Alps and Pyrenees.

C. (LEUCANTHEMUM) ARCTICUM.—Under this name I speak of a plant sometimes grown as *C. alpinum*, with slender underground stems, which produce the shoots not in a tuft. The leaves are deeply divided and have about two lateral divisions like that of the centre, each of them being again divided, though not so deeply, and the ultimate divisions are broad and toothed. The leaves are tufted on short woody stems; the flower-stalk is stiff and erect, about 8 inches high, bearing about three flowers. This plant, I think, is the *C. arcticum* of Loddiges' "Botanical Cabinet," but without a specimen in flower it is impossible to be certain. Mr. W. Dod sends it to me as *C. arcticum* or *C. speciosum*, so that the former name is



Chrysanthemum inodorum plenissimum.

somewhat confirmed. De Candolle describes a plant with solitary flower-heads, but with the figure above referred to, it is said that more are produced by cultivation. This figure shows an immense flower-head nearly 2½ inches across such as I have never seen on this plant. It is not one of the best kinds. Native of Kamtschatka.

C. (LEUCANTHEMUM) ATRATUM.—This is the *Chrysanthemum atratum* of Linnæus, and from specimens in the Cambridge herbarium it appears to be handsome in foliage. They seem to accord with De Candolle's description. The stem is erect and one-flowered; the leaves below are cuneate and divided into three or five large characteristic teeth, which are again dentate or serrated. It is not, however, this plant that is cultivated under the name, which, Mr. Wolley Dod in a recent letter informs me, is said by Sir Joseph Hooker to be certainly *C. maximum*. *C. atratum* was introduced in 1731, and is a native of Austria, Switzerland, and Auvergne.

C. (PYRETHRUM) CARNEUM.—A near ally of *C. roseum*, and the typical plants are so distinct that they should be kept apart, though probably a series of links might be found to connect the two. Both have very similar rosy flowers, but the habit of this is less robust than that of the other; the flowers are rather smaller and the leaves less finely divided.

In this case the pinnæ are incised instead of being pinnate or pinnatisect. This is figured in the *Botanical Magazine* as *Chrysanthemum coccineum*. Native of the Caucasus.

C. CATANACHE.—The beauty of this plant is such that it must be mentioned, though, unfortunately, it is no longer in cultivation. It is one of the interesting novelties discovered by Sir Joseph Hooker, Messrs. Ball and Maw, when they visited Morocco some years ago. The rootstock divides into several heads, and the leaves, covered with a silky tomentum and divided into narrow segments, form a close silvery tuft. The flower-stalks are from 3 inches to 6 inches long, and bear solitary heads 1½ inches or 2 inches across, the ray being pale yellow with a blood-red ring around the central disc. Sir Joseph Hooker says that this is one of the most beautiful plants of the Greater Atlas. It grows in the valley of that range at an elevation of from 7000 feet to 9000 feet. Introduced in 1871. It flowers in April, and a good figure of it will be found in the *Botanical Magazine*, 1874, t. 6107. The specific name was given on account of the silvery white involucre bracts, which resemble those of the genus *Catananche*. Although hardy it may perish from damp, and therefore when re-obtained it must not be trusted entirely out-of-doors.

C. (PYRETHRUM) CINERARIEFOLIUM.—This is a pretty plant found in botanic gardens, but not often in private collections. The leaves are graceful, glabrous above, below silky, and pinnately divided into narrow and rather distant segments; the white-rayed flower-heads are produced singly on slender stalks, which much exceed the leaves, and measure about 1½ inches across. It was figured in the *Botanical Magazine* of October in this year, and it is stated that the Dalmatian insect powder is from the flowers of this plant—a fact not known till comparatively recently. Introduced 1826. Native of Dalmatia.

C. (PYRETHRUM) CORYMBOSUM.—A distinct kind, about 4 feet high when in flower, with leaves somewhat similar to those of *P. roseum*, and broad corymbs of white-rayed flower-heads about 1½ inches across. It is perfectly hardy and deserves to be better known, though under certain circumstances it becomes coarse. If it could be crossed with *P. roseum* the result might be good, and a distinct race, with stems bearing many heads like those of *P. roseum*, might be produced.

C. INODORUM, Hort.—*MATRICARIA INODORA*.

C. (LEUCANTHEMUM) LATIFOLIUM VAR. LACUSTRE.—I am not sure that the form ranked as typical is in cultivation, but this variety, correctly determined at Kew, must now be common, as I myself distributed in exchange immense quantities when this kind of flower became popular. It is a very handsome and strong growing plant, in the Cambridge soil about 3 feet high, forming a close arrangement of strong, erect stems, with coriaceous, oval, strongly serrated leaves. The stems branch sparingly at the top before flowering, and the only other similar kind which does this is *C. maximum*, which is distinguished by having the stem leaves about five times as long as broad, instead of about three times as long as broad, as in this case. This I notice from scraps before me, and the difference in foliage is very evident. The present is one of the best kinds; it is very ornamental in autumn, and the flowers are valuable for cutting. They are of good substance and possess great beauty. Native of Portugal.

C. LEUCANTHEMUM (Ox-eye Daisy).—There is much beauty in this common British plant, and were there not other species better suited in some respects, it would decidedly claim a place in our gardens. It is so well known as to need no description, and its culture can only be a matter of taste. It is no doubt capable of improvement by cultivation, and in the Cambridge Botanic Garden is a curious form with tubular ray florets. It is a native of Europe, Siberia, and West Asia.

C. MAWI.—This apparently is a charming plant, with much the habit of *C. Etoile d'Or*. The flower-heads are from 1 inch to 1½ inches across,

with a white or blush ray rose-coloured at the back. It is half shrubby and referable to no previously known section. It is a native of the Greater Atlas south of the city of Morocco, on dry rocky places, near Mouli Ibrahim, at 4000 feet to 5000 feet elevation, in the Reraia Valley. Most probably it has been lost to cultivation. It should not be entrusted entirely out-of-doors. It is figured in the *Botanical Magazine*, t. 5997.

C. (LEUCANTHEMUM) MAXIMUM.—Speaking of this as *C. atratum*, Mr. Wolley Dod has described it as the best garden form of the genus. He says, "It begins to flower early in July and bears



Chrysanthemum frutescens.

flowers 4½ inches across, while the plant, even in my strong wet soil, is not more than 2 feet high." Mr. Ware supplies a plant under this name, and as I know he has the true *C. lacustre*, it is probably this of which he speaks when he says that it is as showy in autumn as the Japan Anemone. It is allied to *C. lacustre* with which it has been confounded, but the great difference in foliage makes it conspicuously different. In this plant the leaves are narrowly lanceolate, but in the case of *C. lacustre* they are nearly oval. As before remarked, the stems of this branch before flowering, not being one-headed, as in the case of *C. montanum*. It is a native of the Pyrenees.

C. (LEUCANTHEMUM) MONTANUM.—This, I think, is one of the handsomest and most useful of its group. It is much less coarse than the



Chrysanthemum sinense.

popular *C. latifolium lacustre*, and it has a better habit than the Ox-eye Daisy. It also has larger flowers, and it forms a rounder and better furnished tuft than almost any other. In our soil it is about 18 inches high. It has been thought to resemble *C. leucanthemum*, but there are several points of difference, especially in the lower leaves at this time of the year. In *C. leucanthemum* they are long-petioled and obtusely cut, or they form little rosettes, spatulate and lobed; but in *C. montanum* they are thick instead of thin-textured, lanceolate, and serrated. It is earlier than similar kinds, except *C. maximum*, flowering in July. The stems grow erect and bear one

flower-head, each more than 2½ inches across. The leaves decrease in length from below to about the middle of the stem, where the latter becomes naked. Native of the south of Europe.

C. (PYRETHRUM) PARTHENIUM.—The golden-leaved variety of this is the Golden Feather, so well known to all gardeners. The normal plant is wild in Britain. It is scarcely worth cultivation, though some have much admired the Golden Feather when in flower. There is a double variety, which certainly is not common, if, indeed, it is cultivated anywhere. There are new varieties of Golden Feather which delight lovers of bedding out, especially aureum selaginoides, which does not flower the first year, and consequently does not require pinching. Native of Middle and South Europe.

C. (PYRETHRUM) ROSEUM.—Of this species we have now many splendid varieties from the hands of the florist known as the double-flowered Pyrethrums, and to such perfection have they been brought within comparatively a few years that they rival the Aster and Chinese Chrysanthemum. The first improvement, a single rose variety, came from M. Themisterri, of Belgium, into the hands of the late Mr. John Salter, of Hammersmith, and he gradually produced the double forms. The Continental florists also have produced some of the finest doubles we have. In one catalogue alone over 100 double varieties, as well as single ones, are offered. The single kinds have great variety in colour, and are more lovely and graceful for vases than the heavier double varieties. Both sections are offered by the leading nurserymen, and a selection is easily made from their catalogues. Good single kinds may be obtained from a packet of seed, and we have had a very good result from the selection offered as *atrosanguineum*. As a garden plant the typical *P. roseum*, being comparatively poor in colour, need not be grown. These showy plants require some care in cultivation in order to produce the most satisfactory results. They will not succeed in poor soil. A good loam is best, and it requires to be well manured. Dry soils should be mulched with manure in order to keep the ground moist and cool. Cultivation in this way is very easy and the plant is perfectly hardy. The flowers are very showy, and the finest display comes in June, though flowers are produced more or less throughout the summer, and if the plants are cut down after the first flowering they flower again in autumn. In November we have now some single flowers. Propagation is effected easily by division, and when the flowers, by getting small, show it to be necessary, the clumps must be taken up and divided, as the finest flowers are produced by tufts of moderate size. Native of the Caucasus.

C. (PYRETHRUM) SINENSE (Chinese Chrysanthemum).—This is the well-known florist's flower now so valuable and important. Probably the wild original has never been introduced, but it may exist, and it would be of great interest to obtain it for botanic gardens. The few single varieties we have are no doubt very different, having been obtained from the so-called double kinds. I have grown a few this year, and some of them are very pretty, but they do not take the place of the double kinds as ornamental flowers. Much more may be done by raising and selection, and probably much better ones will be forthcoming. It is unnecessary to say anything here about the numerous cultivated improved forms which are so frequently treated of in this and other journals, and every Chrysanthemum grower can now have collected information in the valuable work by Mr. F. W. Burbidge quite recently published.

C. (LEUCANTHEMUM) SPECIOSUM.—Under this name is cultivated a hardy perennial about 1 foot in height, with large white flowers, but it is said not to be one of the best. The name, I believe, is undoubtedly wrong, and I can only find it as a synonym of *C. coronarium* or *C. grandiflorum*. Mr. Ware kindly sends me flowers, and it is neither of those; it is most like *C. montanum*, but appears to differ from it, and with the material now to be had it is impossible to find the name.

C. (PYRETHRUM) TANACETOIDES.—A pretty silvery-leaved plant, of which there are old clumps in the Cambridge Botanic Garden. I have not known it elsewhere, nor has it been known to those who have seen it here. It is very distinct and attractive in foliage, but it does not flower. The stems are short and woody; the leaves are 4 inches to 6 inches long, and half an inch to 1 inch broad, covered with silky tomentum, twice pinnate, the pinnæ pectinate. The main leaf-stalk lasts in autumn long after the leaf is dead. I am indebted to Mr. N. E. Brown for this probably correct name.

C. (PYRETHRUM) TANACETUM.—This by no means deserves attention as a flower garden plant.



Chrysanthemum (Pyrethrum) uliginosum.

It is better known as *Balsamita vulgaris* or *Pyrethrum Tanacetum*. Some interest, however, attaches to it as being the Costmary or Alecost formerly put into ale. Two forms flowering at different times used to be in cultivation at Kew. Native of South Europe.

C. (PYRETHRUM) TCHIHATCHEWII.—A place for this may be found in most gardens. It is a creeping plant with pretty foliage and good white flowers, like those of the Ox-eye Daisy, very suitable for dry banks, where most herbaceous plants would fail to succeed. The stems root as they grow, and quickly produce a carpet of bright green foliage. The leaves are 1½ inches long and much divided. It has not been used as a bedding-out

plant probably, but it appears to be very suitable for certain arrangements. Native of Central Asia, whence it was introduced in 1869.

C. (PYRETHRUM) ULIGINOSUM = P. SEROTINUM. (Hort.).—This is the handsomest of all the cultivated kinds, if we omit the forms of *C. sinense* and *C. roseum*, as improved by the florists, and it deservedly ranks as one of the best herbaceous plants. It grows from 4 feet to 6 feet high, and is worthy of a conspicuous position. The leaves are lanceolate with pointed teeth directed forward, and the foliage is decidedly pretty. At this time of the year there are no leaves at the base of the plant, as in most other species, and it is very different from any other we grow. The flowers are of great size and of very pure white. The stems do not branch below, but towards the summit they are divided into many slender stems, each bearing a solitary flower. The habit of the plant is very stately. It is sometimes, though erroneously, known as *P. serotinum*. It prefers a moist position and decidedly likes good soil. In poor and dry soil it sometimes scarcely exceeds a foot in height. Under favourable circumstances it grows with great vigour, and almost becomes a weed. Native of Hungary.

C. (PYRETHRUM) WILLEMOITI.—I have a plant from Mr. Wolley Dod under this name, but I can find the name in no book nor with specimens to which I have access. The character of the leaf is in some degree like that of *C. cinerariæfolium*, but the divisions of the pinnæ are very much broader. I have, I believe, under this name known a sub-shrubby kind, with finely cut leaves and good yellow flowers, which was not a good perennial or not quite hardy.

CULTURE OF THE PERENNIAL SORTS.—The herbaceous species without exception grow best in rich soil. Some do not need manure, but others, if the soil is not good, cannot succeed without it. *C. roseum* generally needs manure, and *C. uliginosum* may often be very much benefited by it as regards appearance. In the dry and rather poor soil of the Cambridge Botanic Garden it scarcely exceeds a foot in height without special preparation for it, and *C. roseum* is altogether unworthy of its capabilities. Surely it is impossible to discuss the question whether manure is or is not required for herbaceous plants, without overlooking the immense variety included within that term, to say nothing about the different kinds of soil, often poor and indifferent, in which they are grown. I know they often want manure badly enough. With regard to these plants, the necessity of manuring must be considered from observation on the spot, because in some gardens they grow as strongly as could be desired. When the clumps get large all kinds are benefited by division. They are easily propagated by division, and are generally very easy to grow. *C. arcticum* is the only one I have found not to do well, and that has been evidently from its dry position.

Fruticose and Tender Species.

C. (ARGYRANTHEMUM) BROUSSONETII.—This appears to be the correct name of the plant grown as *Halleri maximum*, though flowering specimens have not yet been compared. With *C. Halleri* it has nothing to do. It is decidedly one of the two best frutescent species. The foliage is very handsome, and the flowers large and freely produced. The leaves are broadly obovate, green, divided into about six segments, which are again lacinated and toothed. Native of the Canaries; introduced in 1817.

C. FOENICULACEUM.—This is a very pretty plant, with glaucous leaves cut into slender divisions. They are glaucous, like those of *C. frutescens*, but much more graceful. The flowers are white and pretty. Native of the Canaries.

C. FRUTESCENS (Paris Daisy or Marguerite).—Better called the Paris Daisy or Marguerite than simply Marguerite, because that word means Daisy, to express which the French have no other, and this plant is strongly associated with Paris, where it was a favourite years ago, when even it was scarcely known in Britain. The French call the Daisy Marguerite on account of its pearly

whiteness, Marguerite being the French for a pearl, though not now or but rarely so used. It is supposed generally that the name came from direct association with St. Margaret, and I mention this therefore on the authority of Dr. Brewster. During the last few years the Paris Daisy has been in favour with us, but even yet it is not so popular as it ought to be, for it is so easily grown that good plants might be sold at a cheap rate for the million. Knowing the nature of it, no cultivator



Chrysanthemum (Pyrethrum) roseum (double).

would fail to grow excellent specimens of any size he saw fit. An immense specimen of it, a white elephant in size, but more than that in usefulness, is rather an imposing object, especially in terrace vases or on Grass. Small specimens, too, are valuable for the conservatory, where they flower freely in winter; indeed, it is easy to have it in flower all the year round. Another use for it is found in the flower garden, where with seedling Petunias it makes one of the best beds. This is one of the best mixtures, and such are a great relief in place of masses of scarlet Geraniums. In the greenhouse at this time of the year it associates agreeably with Salvias, such as *S. splendens* and *S. Hoveyi*. No plant can better withstand extremes of damp and drought than this. In small pots it flowers better than in large ones, because the growth is restricted and a greater number of flowers is the



Chrysanthemum Tchihatchewii.

result. Plants may be taken up from the open ground for flowering in winter, but I prefer to grow them in pots and pinch to postpone flowering until the right time. When the cuttings should be struck depends upon the intended size of the plant, but cuttings struck in May grow to a very useful size. Native of the Canaries. It is a curious fact that insular floras often represent the continental herbaceous species by shrubby allies, and these *Argyranthemums* are cases in point. Introduced in 1699.

C. FRUTESCENS VAR. ETOILE D'OR.—I mention this with *C. frutescens*, as it is so generally regarded as a variety of it, but I think that it is

more or less a mistake, because although *C. frutescens* is shown by specimens to vary much, yet it does not, so far as I can discover, vary in the direction of *Etoile d'Or*, which seems to me to have some relationship with another species. In the Cambridge herbarium I find a specimen of *C. ochroleucum*, and if it were a hybrid with this, so far as my consideration goes, I should not be surprised. I shall endeavour to settle this question as soon as I have a specimen in flower. *C. Etoile d'Or* was distributed a few years ago by Mr. Howard, of Southgate, but no doubt it had been in cultivation some time before. The evidence with regard to its origin is conflicting. In the *Revue Horticole* it is stated to have been raised from *C. frutescens* near Lyons or near Cannes. In the *Gardeners' Chronicle* of March 6, 1880, "S. E. F." writes that it was raised about the year 1874 by Nicholas Desgeorges, gardener at the Villa des Bruyères, at Golfe Juan, near Cannes, from seed gathered from Comtesse de Chambord, another similar kind. In this there is much probability, but then what is the origin of this last named form? Finally, M. Ed. Morren writes in the *Belgique Horticole* that it was brought to notice so long ago as 1844 by M. Pepin in the same journal, and that it was raised in the south of France from seed of the common white *C. frutescens*. That is perhaps possible, but, as I have said, it does not seem to me probable without the assistance of another species. Whatever its origin, however, it is certainly a valuable kind and one of the best of this section. Its cultivation is the same as that for *C. frutescens*, except that it requires, I think, more liberal treatment. With treatment in small pots and confinement under which *C. frutescens* has flourished, I have found the flowers smaller than they should be. This I believe may be considered to supersede the variety Comtesse de Chambord, which I have not grown. It was cultivated ten years ago at Ferrières.

C. PINNATIFIDUM.—Not unlike *C. Broussoneti*, but the primary divisions of the leaf are not so deeply divided. The leaves are three or four times as long as broad, pinnati-lobate or pinnatifid, with from six to eight lobes or pinnae. The flowers have a golden-yellow disc and a white ray. A good greenhouse plant, but not so useful as *C. frutescens*, nor so fine as *C. Broussoneti*. Native of Madeira.

REMARKS.—All *Chrysanthemums* appear to vary very much, and, as will have been seen, the names of some kinds are doubtful. Throughout the genus figures and illustrations are much wanted. There are many curious species which might be introduced, but there are none perhaps so fine in their several groups as those we have already in cultivation, except probably *C. (Argyranthemum) hematoma*, of which Mr. Lowe says that in the island of Madeira "a bush of this species on its native black or grey and barren crags—one mass of lovely rose-pink flowers, and conspicuous from afar like a Camellia or Rose bush—is a truly splendid and surprising sight." I shall be extremely glad to receive doubtful kinds, or any not here mentioned, for cultivation, comparison, and identification. It is the *Leucanthemum* section which at present shows difficulty, and gradations though all the species might perhaps be found in a wild state.

R. IRWIN LYNCH.

Botanic Garden, Cambridge.

Fraud at exhibitions.—As Mr. McIndoe, of Hutton Hall, has written to the editor of THE GARDEN to complain of the paragraph on this subject in THE GARDEN of October 18 as a "malicious libel," directed at himself by a party whom he names (Mr. McIndoe stating in his letter that "it is well known he is the party alluded to in the Dundee case"), I write to say that the party he names and suspects is entirely innocent in the matter and personally unknown to me. Moreover, my allusion to the Duchess of Buccleuch Grape case at Dundee was based wholly on the report of the show in the *Gardeners' Chronicle* of September 20, which mentioned no names, and I did not know then, nor until a further communication appeared in the *Chronicle* of October 25, that Mr. McIndoe was the person alluded to. I was not at the Dundee show, and know nothing about it, except from the newspaper reports. My note could not, therefore, be, and was not, prompted by malice against anyone, but was suggested by recent occurrences and written in the interest of exhibitors.—CORRESPONDENT.

FRUIT GARDEN.

APPLES WORTH GROWING.

THE planting season has already commenced, and those who contemplate making additions to their orchards or garden trees, or who intend to form new plantations, will do well to get their trees at once; not, however, because nurserymen are generally in the habit of sending the best trees to those ordering first, but for the simple reason that a few of the most popular sorts are very frequently quickly cleared out, and those purchasing late in the season must then either dispense with them or be satisfied with the best that can be procured elsewhere. This season I have had exceptionally good opportunities of judging of the merits of various sorts of Apples, and am therefore in a position to make a good selection. Apples generally, though fewer in number than last season, have been much finer than usual, the true character of each sort being better developed than I ever remember to have seen it.

CULINARY VARIETIES, besides being extra fine, are also remarkably highly coloured, and present a singularly handsome appearance on the exhibition table. Probably the most valuable in this section is the old Blenheim Pippin, but unfortunately this does not bear well when in a young state, and it is the large orchard trees that produce the most profitable crops of fine fruit. It is a good keeper, splendid cooker, and the medium sized fruits are very good for purposes of dessert. Flower of Kent, a variety extensively cultivated in the western counties, is not unlike Blenheim Orange in appearance and quality, but scarcely so long keeping. It grows into a fine orchard tree, and, like the Blenheim, commands the best prices in the market. Peasgood's Nonsuch is a comparatively new variety that should be included in every collection. It bears well in a young state, and both pyramids and cordons will, under favourable treatment, produce splendid fruits considerably larger than Blenheims, though with rather less colour. It is of a globular shape and perfect in outline, is a good keeper, and available for either dessert or culinary purposes. Loddington or Stone's Apple is another acquisition, and this also grows to a great size, and young trees bear fairly well. Emperor Alexander is good alike for orchard or garden culture, and produces heavy crops of fine highly-coloured fruit, which sell well either for culinary or dessert purposes. Lady Henniker is becoming a very popular sort, and this produces large and slightly coloured fruit on quite small trees, and though classed as a culinary sort, the medium sized fruit must not be despised for dessert purposes. Lord Derby, a large yellow-skinned and rather coarse-looking sort, is a sure cropper on either small or large trees, and a good cooker. It is at its best during November. Red Hawthornden is a very large and highly-coloured variety in season from August to November, and suitable for orchard culture, and the fruit when sent to the market will sell readily. Gravenstein, a grand-looking sort, is in season during the early winter months, and this valuable sure-cropping variety ought to be much more generally grown than at present. It will do well in a bush or pyramid form, but is most at home when allowed to grow freely in an orchard. It is one of the best cooking varieties we have, and is also available for dessert purposes. Dumelow's Seedling or Wellington is too well known to need any comment beyond repeating the advice to market growers to plant it extensively and store the produce for spring sales. Gloria Mundi, a pale yellow variety, grows to a great size and is a fairly good keeper, but will not succeed well on all soils. Mère de Ménage, also very large and highly coloured, is of good habit, and the produce sells well. Alfriston is extensively grown in various parts of the country, and generally does well; it is a fine large Apple and particularly good for culinary purposes from October till the end of March. Warner's King is perhaps the largest Apple grown; I have seen specimens of it weighing 24 ounces. It is a good orchard variety, seldom fails to bear

well, and is fit for use from November till late in March. Golden Noble, a large, heavy, and handsome yellow-skinned variety, is a great favourite in the south-western counties, and should be more generally grown. It will keep till Christmas and sometimes later, and is much liked by the cooks. Royal Somerset also ought to be better known than it is in many parts. It is a yellow and clear skinned variety, conical shaped and large, and is said to be a good bearer as an orchard tree. Scarlet Tiffing is seldom met with, but, as far as appearance goes, it should be worth increasing, as it would undoubtedly sell well in the London markets. Hollandbury is a great favourite among market growers generally, as it forms a good tree, bears well from the commencement, and the fruits are large, usually highly coloured, and good for use from October till January. Hoary Morning does particularly well in the southern counties, and the crops of large, richly coloured, and much-striped fruit are singularly beautiful, either on the trees or the exhibition dishes. The quality is not first-rate, but growers for the markets are not always particular in this respect. Other better known and more generally grown sorts of culinary Apples are Cellini, Cox's Pomona, Stirling Castle, Lord Suffield, Tower of Glamis, Norfolk Beefing, Brownlee's Russet, Winter Majetin, and Hambleton Deux Ans, the last four mentioned being good keepers and certainly not so extensively grown as they deserve to be. The list of really valuable

DESSERT VARIETIES is not a long one, and the best sorts are pretty well known, but there are a few that may well be commented on. I believe Cox's Orange Pippin to be the most valuable dessert Apple in cultivation, being of good habit and especially well adapted for small gardens; it is a sure bearer, and the fruits, of medium size, are of the best quality, keeping well, and fit for use from October till late in January. Where prizes are offered at the late autumn shows for the best flavoured variety, this Apple is almost certain to secure the premier award. King of the Pippins, which is earlier in ripening than the foregoing and certainly not so good in quality, is yet such a useful sure-bearing sort, that this, too, should be grown in every garden or orchard. Ribston Pippin is a great favourite with the majority of Apple eaters, but the trees are too much liable to canker to be classed as a profitable sort. Adams' Pearmain is a sure bearer on almost any soil and form of tree, and keeps well. This season it has coloured remarkably well, and forms a most handsome dish. Ross Nonpareil is not often met with, but it is a most excellent and profitable sort, and succeeds well on our heavy garden soil. The fruits are rather small and covered with russet, and this season they are highly coloured as well. The flavour is distinct and good, and the variety is in season from November till the end of January, and sometimes still later. Sam Young is rather small, but is still worth growing on account of its superior quality. Seek-no-farther is a much neglected sort, but those who have it think highly of it. Both small garden and orchard trees of it usually bear well; the colour is pleasing and the flavour excellent. If carefully stored it may be kept good till late in February. Sturmer Pippin is one of the best keeping sorts we have, and owing to its good habit and free-bearing quality it is a great favourite with growers for market. Tom Putt is principally grown in Devonshire and adjoining counties, but why such an attractive good-flavoured sort should so long have been localised is one of the mysteries unexplainable. From what I can learn from those who are well acquainted with it, no variety is more worthy of being generally cultivated. Braddick's Nonpareil is a good keeper, being in season from November till April, and does well in the western counties, though not as an orchard tree. Court pendu Plat is a general favourite, and rarely fails to bear well. It is best adapted for garden culture, and the rather flat, but very handsome, fruit if not gathered too early, keeps plump and good till late in April. Margil, also a good garden variety, but not a sure cropper, produces handsome fruits of excellent quality, which with us are at their best about

Christmas. Cornish Gillyflower I must confess to being disappointed with, as I fail to detect its very great superiority in point of flavour. It is a shy bearer and keeps well, the latter being its best quality. There are several very superior unnamed sorts which have a local reputation that in time will be brought into notice, and quite recently I was shown a variety remarkably handsome and good in quality that has been grown for many years in one particular orchard. Of new or comparatively new sorts, the two best that I am acquainted with are Worcester Pearmain and Beauty of Bath. Both are free-bearing early sorts, and both particularly well adapted for exhibition purposes. Victory of Bath, I believe, will become a great favourite, being in every respect a most desirable sort. W. I. M.

Dark coloured leaves on Marie Louise Pear tree.—In answer to an inquiry in a recent number, allow me to say that I have three trees of this Pear, one a large pyramid 25 years old. This has been grandly coloured this autumn, the bulk of the leaves being first a dark purplish brown and finishing off, especially on the south side, a most rich and striking crimson. The other trees are trained to a south wall; one a large tree, the leaves of which are still green; the other a cordon three or four years old. This is nearly as richly coloured as the large pyramid, but not quite. I can offer no suggestion as to the cause of the different appearances of the dying foliage of these trees; it cannot be exposure alone, for all alike are fully exposed to the south, and they are grown in soil as nearly alike as possible.—E. W. B.

Warts on Vines.—What is the cause of warts on Vines, like the two I send herewith? I have a house of Black Hamburgs, the Vines in which are very old. They are planted in an outside border, and every cane, more or less, has warts on it; they are also appearing on some of the Vines in an adjoining house. The latter are planted inside, but the roots have an outside border as well. The Vines in this house are about ten years old, and bear very good crops—at least, they have done so up to the present. Is it canker or the work of some insect? I may state that I made an inside border in the first named house last spring and planted it with late kinds, such as Muscat of Alexandria, West's St. Peter's, Alicante, and Lady Downes. These have grown and ripened very well, and my intention was to keep the old Vines for a year or two, cutting off the spurs from the bottom upwards as the young Vines get up, so that I might get part of a crop until the young canes were established.—ALICANTE.

* * The cause of warts or tubers on Vines is imperfectly known. They are generally supposed to originate from adventitious buds, like the gnaws on Beech and Elm trees. They do not cause any injury to the Vines any more than the analogous growths do to Beeches or Elms.—W. G. S.

SHORT NOTES.—FRUIT.

Apple Northern Greening.—Amongst really good Apples, Northern Greening is one of the best and most reliable, being very hardy. It is used extensively in large Apple orchards for outside rows, where it acts as a screen for tender kinds; nevertheless, it seldom fails to carry a good crop of hard, solid fruit, that keeps in sound condition very late in the season, and for culinary purposes but few Apples excel it.—J. G. H.

American Cranberries.—Wisconsin is the best Cranberry State; Michigan is second. The average yield of a marsh is 150 bushels to 200 bushels to the acre. The picking season lasts two weeks, and 3 bushels is a good day's work. The Wisconsin crop is nearly all shipped to Chicago commission houses at 11s. to 12s. a bushel. A well-managed marsh containing some 400 acres will yield about £10,000, and with a very large crop the sum can be nearly doubled.

The Dominie Apple.—With us this is a trustworthy Apple, free bearing, healthy, and robust in growth. In low, cold soils most Apples canker badly, but none repel its attacks better than The Dominie. It is an American variety, introduced by Mr. Scott, of Merriott, in 1868, and is supposed to be a seedling from Rambour. Next to the Keswick Codlin, it is the surest cropper in the garden, bearing heavy crops of good-sized fruits excellent for kitchen use.—A. M., *Cranmore*.

No manure best for young Vines.—I have seen for some time past a good many new vineries and young Vines, and the most substantial rods and finest fruit have been produced in borders on which no manures have been used. Four years ago Mr. Crossling, when gardener to Lord Windsor, at St. Fagan's Castle, Cardiff, had two new vineries erected, new borders formed, and young Vines planted, and the second year after planting these Vines had attained a strength which I never saw surpassed. They were mixed varieties, all the leading and best kinds being planted, and all seemed to vie with each other in robust development. The bunches which each rod was allowed to carry the second year were magnificent in size, and the berries were all that could be desired, being finely swelled and beautifully bloomed. Another instance of the kind has lately come under my notice. This is at St. Hilary, Cowbridge, in Central Glamorgan, where Mr. T. Mansel Franklin has lately erected some good vineries, and planted Vines which are now on a par with those at St. Fagan's as regards extraordinary development. The borders have been carefully formed with maiden loam and a very small percentage of bones, but stimulating manures of the ordinary stable and cowshed description have been strictly withheld; and, therefore, from pure loam Grapes of the highest class have been produced. I have seen many borders made where manure was freely used, but I never saw Vines succeed in them as they have done in the two cases to which I have just referred.—CAMBRIAN.

Peaches and Nectarines.—Why, writes a friend, have you omitted Stirling Castle in your list of not extensively grown Peaches given in THE GARDEN (p. 400)? My reason was that it has now become so well known that it is the rule and not the exception to find it growing alongside of Royal George and Bellegarde. There was one important omission, however, namely, Condor. This is an extremely valuable kind for the early house, as it fills up the gap between Hale's Early and Royal George, and is always good and well coloured. My friend, and he is a savant in Peach lore, thinks highly of Waterloo. It is strange that growers do not plant stones more frequently, as the seedlings therefrom are generally as good as their parents. My father, who has a penchant for growing seedling Apricots and Peaches, instead of trees grafted on Plum stocks, once imported a number of seedling Peaches from the nurseries at Germantown, near Philadelphia. Most of these he budded, but some of the strongest he left. One, notwithstanding the long voyage, and although only rising three years old, bore two large and fine fruits. Two or three others also fruited. The subject of Peaches on their own roots has been by no means threshed out. In regard to Apricots, the late Mr. Ingram, of Frogmore, generally used to grow seedlings. He found them longer lived than budded trees, and not affected by canker, and in free bearing propensities little, if anything, inferior. The Sawbridgeworth Nectarines are a distinct advance. And three of them, namely, Lord Napier, Humboldt, and Spenser, are, in my opinion, nearly, if not quite, the three best varieties grown. The qualities of Pine Apple and Victoria are well known, and also the demerits of the latter. Byron and Stanwick Elruge ought to be in every collection, and are to be preferred to Advance and Albert Victor, which could be without great loss dispensed with. Two good Continental varieties are Galopin and Hâtif de Lelhem.—C. A. M. CARMICHAEL.

5270.—Young Ferns.—It is like burning the candle at both ends to keep Ferns or any other plants growing during the winter, as though there may be an apparent gain, there is none in reality. Under such treatment they lose strength, and do not start with that energy they otherwise would do. Not only is this so, but several of the Ferns mentioned are greenhouse kinds, and therefore heat during the winter would be injurious to them. When subjected to its influence they would be almost sure to become infested with scale and

thrips, insects that generally assail them when artificial warmth is applied. The best treatment would be to keep them in a cool temperature and a little dry at the roots, which will afford them the necessary rest. In spring they should be turned out of their pots, have the balls reduced slightly by

water, it is important to have the drainage perfect, or the balls will soon become sour. To prevent this the pots should have an inch deep of broken crocks over the bottom, and on them some Moss, which will keep the interstices from becoming blocked by the soil. After potting in the way re-

soft in the fronds, that they look weedy and poor by the side of others that have been properly treated.—S. D.

— Of the kinds mentioned (p. 369), *Woodwardia radicans* and *Blechnum occidentale* are nearly hardy, and would be quite out of place in a



Chrysanthemum frutescens Etoile d'Or; flowers pale yellow (see p. 443).

working out the soil carefully, and then repotted. This should be done in a mixture of equal parts peat and loam in a somewhat fresh, rough state, and if a sprinkling of small pieces of charcoal, with some sand, can be put in, all the better, as the charcoal will keep the soil porous. The next suitable substitute for charcoal is fine cinders or soft red brick, in the proportion of about a peck to three bushels; and as Ferns require plenty of

ferred to, the next thing is to place the plants where they can get a close, moist atmosphere for a time to give them a start, after which they will require more air to prevent the young fronds from becoming drawn. It is necessary to shade Ferns sometimes, but they often get more of it than is good for them, the result being that when taken out of the house in which they have been standing they flag, or are so weak in the stalk and thin and

temperature of between 60° and 70°. *Pteris scarberula* is a cool house kind, as is also *Adiantum formosum*, but the others require a slightly higher temperature, say 55°, through the winter. I do not think that any advantage would be gained by endeavouring to make them grow through the winter, but in all probability the reverse, as the apparent progress would be at the expense of the constitution of the plants. At the same time they should

be shifted quite early in the year, say the last week in January, and if they then had a constant genial warmth of from 50° to 55° up to mid-April, time would be gained, and the plants would get larger than if grown quite cool.—J. C. B.

SEASONABLE WORK.

FLORAL DECORATIONS.

CHRYSANTHEMUMS of many kinds will now be yielding an abundant bloom; but where the plants are arranged for effect it is not expedient to cut the most prominent flowers unless required for very special purposes. A plentiful supply for all ordinary uses can, however, be taken from plants that have not been too severely thinned, and also without spoiling the general effect. For decorative work the flowers of some kinds are prettiest when of a medium or even small size, such, for instance, as Mrs. Rundle and Golden George Glenny. The abundance of side blooms on these valuable kinds will cause them to be in much request where any amount of cut flowers is required. Julie Lagravère is another good kind in a cut state, having stiff and sturdy growth. Its dark flowers associate well with that fine yellow Pomponne, St. Michael, which when cut is one of the most enduring Chrysanthemums grown. For coat flowers and bouquet work, as well as for arranging with either of the two foregoing varieties, we find Mdlle. Marthé to be one of the prettiest amongst whites. Two very distinct and pleasing sorts are the white Marabout and Adèle Frizette, a lilac form of the same; for small specimen glasses these, when used in conjunction, will be found to be very effective. For bolder forms of arrangement with large flowers, Jardin des Plantes and its bronze sport are excellent; whilst of dark varieties Progne and John Salter are both good. Virgin Queen is a very useful white, its large flowers standing erect; and Lady Talfourd, rosy lilac, is another kind distinct in colour. Of the Japanese section, we find the following to be all excellent in their respective colours, viz., Elaine and Fair Maid of Guernsey, whites; James Salter, lilac; Peter the Great, yellow; Fulton, bright yellow; Fulgore, rosy purple; La Frisure, rose; and Red Aragon, chestnut-red. Having grown and proved these varieties to be good for floral decoration, we can recommend them. Of foliage to associate with them, nothing looks prettier or more appropriate than the shoots and leaves of Berberis Aquifolium, varying as it does in colour from deep green to bronzy red. The deep tints of some of its leaves look most effective associated with white and yellow flowers. A few shoots arranged first in a fair sized vase, and then some of the larger blooms of two or three distinct shades with sufficient length of stem to stand just above them, will make a striking arrangement and one that will last for several days in perfection.

FLOWER GARDEN.

HERBACEOUS BORDER.—Many of our plants have outgrown their positions. Some have spread to the injury of adjoining plants; some are too tall for their present places, and so we are lifting them all, and this will enable us to prepare the border thoroughly by trenching out all the old roots and adding liberally both fresh loam and manure. This done, the arrangement of plants will be something after this fashion: For the most part the tall growers will be in groups of three plants at the back part of the border, but there will be here and there a group nearer the front, as uniformity either as to height or position seems out of character with this class of plants. In the front part of the border will be arranged the weaker growers; these will be in groups also, and vary in number from three to nine according to the varying height and spread of the plants. This done, so far as plants and time to do it will allow, the more naked spots both between and over such plants as Lilies, Pæonies, and Funkias will be carpeted with evergreen Sedums and other suitable plants; and those portions of border not so treated will be

surfaced either with finely sifted leaf-soil or Cocoa fibre. If there is likely to be a scarcity of herbaceous subjects, small evergreen shrubs, disposed at regular intervals throughout the border, may be used with excellent effect, and of course can be moved at any time that the herbaceous plants need additional space. This, together with re-gravelling of walks and planting a clump or two of Rhododendrons, constitute some of our present doings in the flower garden.

SOIL AND MANURE FOR ROSES.—As all Roses are fond of deep, rich soil, the beds or positions intended for them should be trenched or double dug, and have plenty of rotten manure worked in as the digging or trenching proceeds. In cases where the land is very stiff and heavy the best manure to use is that from horses, as this contains much vegetable matter, and is a great help in preventing the stiff soil from binding too closely and shutting out air, which has such a sweetening, beneficial influence on the character and texture of all soils. For light sandy ground cow manure is the most suitable, on account of being cooler in its nature, and when in a decomposed state highly congenial to the roots of most plants, and particularly so to those of the Rose. What improves light land more than anything else for growing the queen of flowers is clay; not the sticky stuff one so often sees, but the flaky material to be met with in layers in pits where brick earth is got, which, when exposed to the atmosphere, crumbles to pieces. These fine nodules mixed up and buried retain moisture for a very long time, and it is surprising the way in which roots thread their course along and through them, and with what avidity they find them out and feed upon them. Knowing this to be the case, and having witnessed the good effect of such clay as that mentioned in the culture of Roses in light land, we strongly recommend its use, but it should be applied in moderate quantity and kept well under the surface. In the planting of Roses all the preparation they require when received is just to trim the ends of any roots that may have become jagged or injured in the process of taking them up, as the tops are best left intact till the spring. As soon as the planting is finished and the soil made tolerably firm around the plants by treading, the next thing is to mulch the ground over with some light, half rotten manure, which is a most important matter to attend to, as it insures the safety of the plants against frost by protecting the most vital parts, viz., the collars, or, say, the junction of the Rose with the stock. Not only is mulching requisite for freshly planted Roses, but it is just as essential for those established, and if Teas are to be saved from injury by the severity of the weather, additional protection must be afforded. The best way to treat standards of these is to bind haybands round about the part where they were budded and at the base of the lower branches, which, with a mulching over the roots, will carry them safely through any ordinary winter. Teas in beds may be easily sheltered by working in among them some fresh, dry leaves or Bracken, which may be kept securely in their place by sticking some Gorse or other evergreen twigs thickly between the plants, and the twigs will also be a great help in warding off sharp, cutting winds. To have Tea Roses in perfection and get flowers from them both late and early, there is no situation equal to a warm, sunny border under a wall or fence or other similarly sheltered position, but they should be far enough from trees to escape being robbed by their roots. To prolong the season of such sterling useful sorts as Maréchal Niel, Céline Forestier, Climbing Devoniensis, and Gloire de Dijon, it is a good plan to plant on different aspects where they all have plenty of room to ramble, as it is only the long, free shoots that afford the fine flowers. To train these and other climbers on walls strained wire is best, as by its use there is no occasion to nail and spoil or deface the bricks.

INDOOR PLANTS.

HEATHS.—The different varieties of winter flowering Heaths are always effective when in bloom, grouped as they usually are with other

plants in greenhouses and conservatories; nevertheless, when subjected to the treatment they often receive, their cultivation is far from being satisfactory, inasmuch as they frequently fail to survive their first season of blooming. Similar to the whole Erica family, they like cool, airy treatment, with a position where they receive plenty of light, in place of which when used in conservatories that are kept above a greenhouse temperature that at once has the effect of starting them into growth, more especially if, for appearance sake, they are stood in the body of the house, crowded and overhung with other plants. It is very much better to confine their use to structures where a lower temperature is maintained, and in all cases to keep them as near the glass as possible, even if some little sacrifice is made in the arrangement for general effect. They should be frequently looked over to see that they are free from mildew, for if this attacks them, in a very few days so much of the foliage will be destroyed as to endanger their existence. Dry flowers of sulphur is a safer application at this season than syringing with water impregnated with sulphur. Where spring and summer-flowering Heaths are grown, they should be looked over for mildew every ten days during such moist weather as we have had through the autumn; this is the more necessary after a cool, unless summer, in which the season's growth has had less than the ordinary opportunity of getting fully hardened up. It is a pity that in so comparatively few places Heaths are now included amongst the greenhouse plants. An impression often exists that even when required for home decoration, they must necessarily be subjected to the stiffly trained, formal condition in which they are frequently seen on the exhibition stage; this is altogether a mistake. Most of the many varieties now in cultivation are naturally of a compact, bushy habit, requiring little support from stakes and ties if the groundwork has been properly laid by judicious training in the first stages of their existence. After this, when they have to be no further moved about than from one house to another, very little support, with a total absence of the formality present in highly-trained specimens, will suffice. But to arrive at this the plants should be well cut back each season after flowering. With a judicious selection of the freest growing, vigorous kinds, a collection can be kept up at a less cost than is often expended on plants that do not possess half the beauty and interest which they do. Anyone disposed to begin the cultivation of these plants, or add to the stock they already have, will find this a better season to get them in than waiting until spring, when the soft growth then present is much more likely to get injured by packing and transit. Where a house or pit is devoted to them they should be kept well up to the glass and have air admitted liberally every day when not frosty, avoiding a direct draught on them as much as possible by letting it in on the side opposite to where the wind happens to be. For the next three months the plants will require less water. This applies more particularly to the hardest wooded, slowest growing kinds.

BULB FORCING.—The last lot of Roman Hyacinths should now be put in heat, to give a succession to such as were brought on earlier; at the same time a selection of the most forward large flowered varieties ought also to be put in warmth, bringing them on gradually, as if at all hurried both the foliage and the flower-stems will have a drawn, sickly appearance that goes far to destroy their beauty. In all cases see that plenty of roots have been formed before they are submitted to heat.

PANCRATIUMS.—So manageable are these plants that with a sufficient supply they may be had in bloom almost all the year round. There is scarcely any flower in cultivation that gives such a finish to an artistic bouquet as do these elegant fragrant flowers. In such arrangements they produce an effect that even the choicest Orchids fail to do. By putting a few, say half a dozen, plants in a brisk heat once a month through the winter a succession may be had that will permit of a few

blooms always being available. All that is necessary is that the plants should have had from their last blooming a sufficient time to make and mature a fair proportion of leaf-growth, with a subsequent rest through somewhat drier and cooler treatment.

EUCHARIS.—Some growers of the useful *E. amazonica* fail to bloom it satisfactorily by the usual treatment of growth, rest, and excitement. The cause of this will usually be found in the growth never being fairly stopped through the presence of combined heat and moisture—too much to allow the necessary cessation. When any difficulty in this way is experienced, they can be made to flower by turning them out of their pots, and shaking the soil from the roots and repotting. This rarely fails to induce strong bulbs to flower. With some, *E. candida* does not bloom so freely as the older kind, but shaking out and separating has a like effect in inducing it to flower. When better known this sort is likely to be a general favourite, its smaller, more elegant blooms being better adapted for some purposes than those of *E. amazonica*.

BOUVARDIAS.—Where a good stock of these is at hand in the shape of plants possessing the full complement of vigour, there are few things that yield such a continuous supply of flowers. Where they have been grown on the planting-out method in pits or frames during the summer and taken up and potted some time ago, each plant will have several shoots, something like 18 inches or 20 inches long, and as thick at the base as an ordinary pencil. Growth such as this will produce flowers from six to eight joints below the leading points, coming in in succession after the first are over; but to bring these up to their full size, they must be kept in a brisk growing temperature close to the glass, so as to counteract the effect of the warmth. Without this the flowers will be soft and liable to flag when cut. Plants that have been grown on the planting-out system are better able to give a succession of full-sized flowers than the weaker examples resulting from pot-growth all through the season. Such as are cultivated in the latter way should be regularly supplied with manure water once every ten days or fortnight, otherwise the successional bloom will be weak and poor; this is especially the case if much restricted to root room.

HELIOTROPES.—Where sweet-scented flowers are in demand for cutting, these plants should be grown in considerable quantities, for so accommodating are they, that with an intermediate temperature they will keep on flowering the greater portion of the winter; but to have them at this season, the plants should be specially prepared. Small examples struck from cuttings in the spring and grown on in 6-inch or 8-inch pots, and well hardened up by exposure to the sun through the latter part of summer, will bloom freely now with a temperature of 55° in the night. Old plants grown in large pots and placed out-of-doors during the season will answer equally well and furnish flowers in such quantities as will well repay for the room they occupy, but in all cases they should have all the light it is possible to give them, with a little air on mild days, or the flowers when cut will be more liable to flag than many other things. These and other plants that bloom from growth that is made during the winter are very different from those that make growth and set their flower-buds in summer; with the latter winter forcing simply causes the development of the bloom already formed without the shoot extension that goes on with the former description of plants, and which, from the diminished light and air which are present in winter, are necessarily softer and less able to bear the hard usage to which cut flowers are usually more or less exposed.

PERPETUAL CARNATIONS.—If these are grown in sufficient quantity, and they have been treated so as to give the requisite succession of bloom, there will be many of the old plants that flowered in the spring, or seedlings where these are grown, that will be furnished with flower-stems, the buds of which are well advanced in size; if these are

placed in the temperature of an intermediate house they will go on opening slowly and be found very useful. See that the plants before being put in warmth are quite free from aphides, to which they are subject. These insects may be destroyed by dipping in tobacco water or fumigating with tobacco, but aphides that subsist on the sap of such hard-leaved plants as Carnations are proportionately more difficult to kill than when they live on more succulent foliage; consequently, a second or third application of whatever is used may be necessary.

FRUIT.

VINES.—As soon as the leaves are down Vines infested with insects must be made thoroughly clean. Stop all suspicious holes and cracks with pure Gishurst, and paint with a solution of the same 8 ounces to the gallon of water, thickened to the consistency of cream, with sifted loam. On the other hand, Vines which have not been infested with insects may be passed over with a good washing, as nothing is gained by dressing where there is nothing for the dressing to destroy. Of all the insects with which the Grape grower has to contend, the mealy bug is most to be dreaded, as it too often springs into life year after year where the most careful attention has been devoted to its destruction. Spirits and oils of various kinds have been used, and all of them kill where they touch, but it generally happens that some escape, and the only way in which they can be successfully exterminated is by careful watching and searching in the spring, when every bug may be destroyed as it emerges from its winter quarters by dressing the place with Gishurst compound or methylated spirits of wine.

LATE HOUSES.—If the laterals and extension growths have not been removed, take them off at once, as they hold moisture and keep the sap in motion. Remove the ripe foliage as it parts freely to the touch, but not before, as many late Vines often carry their foliage well into December. In damp or foggy weather keep the front ventilators closed, and gave a chink of air at the apex with just sufficient fire heat to expel moisture. On bright, dry days create a circulation of air by opening the top and bottom ventilators for a few hours, warm the pipes to set it in motion, and shut up in time to prevent the temperature from descending below 45° after the heat is turned off. Get all external borders well covered with Fern or litter, and place lights or shutters over all where the Grapes are intended to hang until after Christmas. From this time forward the bunches must be looked over twice a week, and if Gros Colmar do not keep well in the low temperature which suits the other kinds, cut and bottle them, and place them within the influence of warmth from the pipes in the Grape room or Muscat house.

ORCHARD HOUSES.—Though the weather is still favourable, yet the little frost we have had is a proof that the time has arrived for getting all pot trees now standing out of doors well plunged to protect the pots from injury by the expansion of the soil. When thus taken care of the general stock may remain out in the open air until the middle or end of January, when they will be the better under glass. Meantime steps must be taken for cleansing, painting, and preparing the interior of the house particularly where it is or has been used for soft-wooded plants like *Chrysanthemums*, which sometimes leaves an unwelcome legacy behind them. The general pruning having been performed early in the autumn, shortening back and washing will, as a matter of course, be deferred until the time arrives for housing, but on no account allow the last named operation to be neglected, as the work is quickly performed, and careful washing with strong soap water is quite as beneficial to young wood, be it ever so free from insects, as sponging is to plant foliage. A few words may here be said with regard to shortening back, as serious mistakes are sometimes made by cutting the dormant trees into shape, when shy kinds like the *Noblesse*, which only make terminal wood buds, lose some of their

most promising shoots by their removal. Practical men who know that it is always safe to prune to a triple bud can make no mistake; but the amateur, whose great delight is centred in the performance of his own knife work, will do well to wait until the buds begin to swell, or if he leaves it until the fruit is set no harm will be done. Where pot Figs are grown in the cool orchard house they need not be removed from beneath the glass, as a severe winter like that of 1880-81 might render them useless, or nearly so, for the following season. If Strawberry plants intended for this house are removed from the open air, set them on the floor in preference to placing them on shelves.

KITCHEN GARDEN.

We are now just lifting Rhubarb and Asparagus for forcing. The former forces best when kept quite dark, but the latter must have air and light if flavour is wanted. We are provided with a capital place in which to force this delicacy, viz., an old Pine pit just emptied of Tomatoes. This pit will again be planted with Tomatoes in January and February; therefore, Asparagus just fills up the blank. We have Mint in shallow boxes, Tarragon, Mustard and Cress, and a host of other little things, including most kinds of spring flowers for forcing, also in this pit; therefore it is a most useful and accommodating structure. Outside we are manuring, trenching, and digging every available inch of land, throwing it up rough. By February it will be like a bed of ashes, well pulverised and well sweetened—certainly one of the main things as regards kitchen garden cropping. Our site for Onions next season is just cleared, having been cropped with Snow's Broccoli, which is now laid in in a spare border. To this ground we give a thorough manuring, dig it deeply and roughly, and in the meanwhile we mix up old night soil with ashes and wait for frost; then we give a good top-dressing with this mixture, and as we never sow our Onions before the end of March, ample time is given for all to be mixed and worked together. Cos Lettuce should now be lifted and protected. Endive we find most useful, and the same may be said of Chicory, which we blanch in the Mushroom house; we find that a sprinkling of powdered charcoal among the plants helps to dispel damp.

WORK DONE IN WEEK ENDING NOV. 18, 1884.

NOVEMBER 12.

DRY, sunny, and but little wind tempted us to devote the whole day to sweeping, raking, and carting away leaves, the best being stacked for hotbed purposes, and the remainder for rotting down as leaf soil. This latter consists principally of the sweepings from roads and walks, and consequently there is in it a good deal of grit, which is by no means an objectionable ingredient, but rather the reverse, when used, as ours for the most part is, for potting bedding plants and for incorporating with the soil in flower beds that do not require a richer manure. We also find it an excellent Potato manure for heavy or stiff soils, and even on light soils, if sifted and placed in drills, and the sets on it and covered with it, the tubers turn out extra clean and handsome. Work in the houses has been much the same as for several days past, viz., tying Peaches and arranging plants of all kinds as closely, yet neatly, together as we can in structures that are to be heated, that there may be as little labour in regard to covering up cold frames and pits as possible, these last structures being entirely given over to plants that will stand 10° or 12° degrees of frost without being injured, and to this class belong *Calceolarias*, *Echeverias*, *Verbenas*, *Abutilons*, *Grevilleas*, and others.

NOVEMBER 13.

Another grand day; more leaf harvesting, made up bed in early vinery with leaves and small percentage of fresh stable litter, which will help them to heat the more quickly. This hotbed is intended solely for atmospheric moisture and warmth, and not for heating the border, as that is

entirely outside, and was covered over weeks ago with leaves and litter to keep in the summer warmth, and no other covering is necessary, nor will any be given. I once thought that a hotbed for early Vine borders was a necessity, but having for several years quite discontinued the practice, the improved state of the Vines generally, freedom from shanking and perfect finish are now the rule; but under this hotbed system such results were quite the exception. Hence whilst we save an immensity of labour in regard to frequent renewals of heating material, we can also with greater certainty predict satisfactory results. Personally, I should prefer to have all early Vine borders inside, but in respect of the one now in question such an arrangement was impracticable; and a good job it was so, for it has taught us easily the most valuable practical lesson of the many we have had to learn very hardly during our gardening career. The Vines have been tied down in horizontal form over the heating material—the moisture from which renders syringing almost unnecessary—and in this form they will remain till the buds burst. This hotbed is useful for starting Spireas, Deutzias, Lily of the Valley, or any other forcing plants, or even for forcing Asparagus. Cut down and cleared away the Asparagus stems from the piece that was planted two years ago, and which at the time that the older plots were cleared was quite as green as in summer; hence it being left till now. The bed will be weeded at once, and the first frosty morning that the ground will admit of being wheeled over without indentation it will be given a good dressing of well rotted manure, and later in the spring a sprinkling of refuse Vine-border soil, or rather the old soil that has been saved for such purposes when new borders have been made.

NOVEMBER 14.

Planted a few dwarf-trained trees of Peaches and Apricots. Of the latter we find it desirable to keep a stock of young trees, and soon as older ones manifest a disposition to die off—as the manner of Apricot is—they are at once dug up and replaced, for it is labour lost and anxiety prevented to attempt to devise ways and means of cure. Mulching is at once given to all freshly planted trees. There being indications of a sharp frost, all Broccolis were looked over and covered with their own leaves. Brussels Sprouts, cottager's Kale, and young Coleworts are at present swarming with the white fly that is peculiar to the Cabbage tribe, and require frost to settle the pests. We have had all the large and useless leaves cut away in hope of getting rid of some and letting the frost have full play at the remainder. The injury to Brussels Sprouts is really serious, a large proportion of the sprouts being so covered with the excrement as to be quite useless. The cause of such a visitation is, I think, due to the extraordinary drought, and will only be effectually subdued by sharp frost and heavy rain. Pruning Pears on walls. Soft scale has gained a lodgment on some of the trees, and this is rubbed off as pruning proceeds, and soon as this operation is complete walls and trees will be syringed with Gishurst compound, at a strength of 4 ounces to the gallon of water, in places where the scale is, but other parts will have a heavy syringing with soap-suds only, after which the old mulching will be removed, and good manure, and in some instances new soil, be given, the latter to trees that are not over robust and would be benefited by taking away the old top soil right down to the roots and replacing with new. Put a few Strawberries on early vinery shelves. Our plants for earliest forcing are grown in 4½-inch pots. We find by using this small size that a scarce plant fails to burst its buds and set its fruit well, but such is not the case with the plants in larger pots, and therefore plants in 6-inch pots are not put into force till after Christmas, at which season they do as well as the smaller size do earlier. The plants get very dry by standing in frames and other sheltered spots, that when placed in the house it is advisable to examine them carefully as to the balls being wet throughout, and when once

this is assured very little water will suffice till the roots get active and the plants into full growth.

NOVEMBER 15.

Sweeping up leaves at this season is heartless work, but necessity knows no choice. The extra sharp frost of this morning brought them down rapidly, and being calm we reluctantly left other work to get them together, and to tidy up generally, Sunday neatness being ever our aim. The work in the houses has been of the same nature; extra scrubbing of floors, &c., is always the rule on Saturdays. Put in cuttings of Pelargonium for pot culture. Double varieties are our favourites for winter flowering, and the cuttings put in to-day will make the best plants for next winter's use. Put in first lot of Chrysanthemum cuttings, and cut down plants that have done flowering, and housed them in late Peach house, that we may get cuttings at an early date. Looked over Grapes, and cleared out all decaying leaves. Washing out of vineries containing ripe fruit is of course not done at this season, but every part of them is well swept with hair brooms. Spiders and their webs, if not frequently removed, spoil the appearance of Grapes by smearing the bloom, and, I think, of the houses too.

NOVEMBER 17.

Lifted remainder of Dahlias and Cannas, and tidied the beds and borders. Began to lift Roses; our soil being very light and soon exhausted, it is necessary to do this every alternate year. The plants are taken up and heeled in near at hand; the soil is then taken quite out of the beds, and as much new as can be had, together with well-rotted manure, is mixed with part of the old and well trodden into the beds and the plants put in at once (as a matter of course, suckers and long, useless roots are shortened back previously), the whole having a final mulching of the best manure available, which also acts as a protector from frost. Hyacinths, Tulips, and Lilies are planted amongst the Roses, and as edgings Crocus, Violas, Daisies, and Primroses. Brompton Stocks, Canterbury Bells, and other biennials we have occasionally planted amongst them, but they grow too large, unless the Roses are planted a long distance apart, and therefore it is preferable to use smaller growing plants. Pruned midseason vinery and all Hamburgs. The foliage had not all fallen, but we could not wait, as it was time the Vines were at complete rest, and a part of our creed is that this state is not attained till pruning is done. The house will now be kept open in all weathers, except during the prevalence of sharp frost. Housed Beetroot; we pull it up as carefully as possible and stack it in sand in a cool shed. The tops are left intact till the roots are wanted for use. Were it not for the inconvenience and labour of covering with litter or Bracken whenever frost seemed imminent, the roots would keep in the best condition—as regards quality—in the ground where they have been grown. The ground will now be prepared for the Onion crop of next year by trenching, and the use of earth-closet manure and soot as a dressing.

NOVEMBER 18.

Replanting Roses, and trenching other borders ready for planting. Hyacinths and Tulips are being planted in the widest spaces between the Roses, and a few Pansies, Violas, and Stocks in the larger beds, trenching in the kitchen garden being our other outdoor labours to-day. Indoors the canes of intermediate Vines have been well washed with Gishurst, not as a cure, but a preventive against the attacks of insects. Peeling off the outer bark of the canes, which some practise, seems so unnatural, if not harmful, that we never do it, other than tearing away unsightly loose pieces, which never amounts to much. The vinery under notice is full of Camellias planted out, and as soon as the Vines are done and tied in their places, these also will be given a thorough washing with the hose and the border a drenching, as since the Grapes ripened very little water has been given them. They grow and flower to perfection under the Vines, and the plan is worthy of copying by all that are fond of Camellias and have a

lofty vinery in which to plant them. Cleared out fruit room, all decaying fruit being either thrown away or brought out for present use. HANTS.

SOCIETIES.

CRYSTAL PALACE CHRYSANTHEMUM SHOW.

NOVEMBER 14 AND 15.

THE series of flower and fruit exhibitions which have been held at the Crystal Palace this season was brought to a close on Friday and Saturday last on the occasion of the Chrysanthemum show, at which the company offered no less than £200 and upwards in prizes, the largest amount that has probably ever been offered at a Chrysanthemum show. Notwithstanding this, however, the competition was somewhat limited, and some of the classes were not represented. This may be accounted for by the fact that a Chrysanthemum show at the Palace is an innovation this year, and probably exhibitors were not aware it. Should the company continue to hold a Chrysanthemum show, we might suggest a little modification of the present year's schedule, which was characterised by being unusually liberal with respect to the money offered for prizes in some classes and exceptionally mean in others, and perhaps the circumstance in some measure accounted for the scanty muster of exhibitors. If, however, cut flowers and trained plants were not plentiful on the present occasion, the public certainly had the pleasure of seeing the capabilities of the Chrysanthemum as a decorative flower; for of all the groups which we have seen exhibited, we never remember seeing a more imposing or better arranged one than that at the foot of the orchestra in the central transept, arranged by Mr. Head with plants from the company's own collection. This group could not have occupied less than 1000 square feet, and formed a gracefully sloping bank of well-grown and flowered specimens, consisting of the best sorts. This group had a background of noble Palms, Tree Ferns, and such similar fine-leaved plants, some of which were also interspersed among the Chrysanthemums, in order to tone down their brilliant colours and to form a graceful fringe. A few happily arranged marble statues dotted here and there in the midst of the plants added considerably to the effect. This group was indeed "arranged for effect," and exemplified in a striking manner what beautiful effects Chrysanthemums are capable of producing when intelligently and tastefully arranged with other plants. As a rule, Chrysanthemum groups at shows arranged for effect represent a jumbled mass of plants, the tall behind and the short in front, unrelieved by greenery of any kind and without regard to harmony or massing of kindred tints. Of course, until compilers of schedules define what an effective group is to consist of, exhibitors cannot be expected to break from the conventional practice. Good illustrations of ordinary show groups were to be seen at the Palace from Messrs. Laing's nurseries at Forest Hill. One of these consisted entirely of Japanese sorts, the other of incurved varieties. There was no doubt as to which group was the brightest and most effective from a colour point of view. The Japanese sorts produced a telling effect 50 yards away; the others, consisting of incurved varieties, required closer inspection. Both these groups were exceptionally fine and a credit to the exhibitors, particularly that composed of Japanese sorts, which included numerous novelties.

INCURVED SORTS.—Mr. Herrin, Chalfont Gardens, Gerrard's Cross, as at Westminster last week, showed the finest in the class for 36 sorts. He had the following: Empress Eugénie, Princess Teck, Jardin des Plantes, Lord Wolseley, Empress of India, Queen of England, Golden Empress of India, Jeanne d'Arc, Venus, Mr. Brunlees, White Venus, Lady Hardinge, Sir S. Carey, Mrs. Hali-burton, John Salter, Barbara, Princess Beatrice, Golden Eagle, Mrs. Dixon, Refulgens, Cherub,

Lord Alcester, Mrs. Shipman, White Globe, all first-rate examples.

The best twelve incurved varieties shown by Mr. Slogrove included the following: Empress of India, White Globe, Guernsey Nugget, Venus, Queen of England, Jardin des Plantes, Cherub, Prince Alfred, Mrs. G. Rundle, Isabella Bott, Baron Beust, and Mrs. Dixon.

The best nine incurved sorts, shown by Mr. G. G. Stone's gardener in the amateurs' class, consisted of Golden Empress, Princess Teck, Jardin des Plantes, White Venus, Nil Desperandum, Eve, Princess of Wales, Mrs. Shipman, and Mrs. Sharp.

JAPANESE SORTS.—Mr. Charles Gibson, gardener to Mr. Wormald, Morden Park, Mitcham, won the first prize for thirty-six sorts. He had fine examples of Fair Maid of Guernsey, The Sultan, Sarnia, Criterion, M. Ardene, J. Dé'aux, Grandiflorum, Ceres, Thunberg, Mdle. Lacroix, Comte de Germiny, Mdme. C. Audiguier, Boule d'Or, Alba striata, Triomphe de la rue du Châtelet, Alba plena, Red Dragon, Peter the Great, Striatum, Fanny Bouchardet, Père Délaux, Baronne de Prailly, Bismarck, Duchess of Albany, Ethel, Meg Merrilies, Nuit d'Automne, l'Incomparable, Nagasaki Violet, Hiver Fleuri, M. Délaux, Fulgore, Arlequin, Fulton, The Daimio, Elaine. The first prize collection of twelve Japanese sorts from Mr. Wyatt comprised Criterion, Triomphe de la rue du Châtelet, Fair Maid of Guernsey, Mdme. C. Audiguier, Peter the Great, The Daimio, Comte de Germiny, Baronne de Prailly, Fanny Bouchardet, Cry Kang, Thunberg, and R. Ballantine. The nine best Japanese in the amateurs' class were the following: Soleil Levant, Elaine, Mdme. C. Audiguier, Henri Jacotot, l'Incomparable, Mons. Hubert, Peter the Great, Comte de Germiny, and Baronne de Prailly.

REFLEXED SORTS.—The best dozen reflexed and Anemone sorts were shown by Mr. G. Chadwick, who had Progne, Golden Christine, Christine, Lady Margaret, Fleur de Marie, Julie Lagravère, all first-rate. The class for twelve reflexed sorts was well represented by a collection from Mr. Arnold, who had Peach Christine, Golden Christine, Pink Christine, White Christine, Annie Salter, Chevalier Damage, Progne, Garfield, and King of the Crimsoms. With the exception of a very fine dozen blooms of Anemone-flowered sorts from Mr. Herrin, the pompones, Anemone pompones, and Anemone-flowered sections were poorly represented. Mr. Herrin's collection of a dozen blooms was disqualified on account of its containing two blooms of one sort.

MISCELLANEOUS CLASS.—There were several classes set apart for ornamental hardy trees and shrubs, but there was but one representative; this was Mr. Turner, of Slough, who sent a very fine group of some thirty distinct sorts of Ivy from his large collection. All were large trained plants, and the group produced an uncommon and attractive feature in the show. A showy group of cut flowers, consisting of Primulas, Pelargoniums, and cut Chrysanthemums, was exhibited by Messrs. Cannell, to whom an extra prize was awarded, likewise to Messrs. Dixon, Hackney, for cut Chrysanthemums tastefully arranged with Ferns, and to Messrs. Nothard for a collection of American Apples.

FIRST-CLASS CERTIFICATES for Chrysanthemums were awarded to Mr. Springbett, Holly Nursery, Cheshunt, for three Anemone-flowered sorts, named Madame Cabrol, very large, ray florets long, twisted, and rose-pink, paler in centre; Fabias de Maderannaz, outer florets long, pale rose-pink, inner paler; Sœur Dorothee Souille, of medium size and pale pink, and possessing the best centre of any Anemone-flowered sort. To Messrs. J. Laing, Stanstead Nurseries, for the following Japanese sorts: La Purété, pure white, an improvement on Mdme. La Croix; M. Tarin, delicate blush, large; M. Astorg, very like Elaine, but with broader florets and pure white; Carmen, broad, reflexed florets, rose-pink, pale-tipped; Beauté des Jardins, a reflexed Japanese sort of a deep rose-purple, very free and showy. To Messrs. Cannell,

Swanley, for Cullingfordi, the splendid new English-raised sort described last week; its large, bright crimson-red flowers had a telling effect in Messrs. Cannell's group. To Mr. Watson, The Grange, Herne Hill, for Mdme. La Croix, a pure white Japanese sort in the way of Lady Selborne, but with narrower florets.

A list of awards is given in our advertising columns.

Ghent Horticultural Society.—At the monthly meeting of this society, held on November 10, the following plants were awarded certificates of merit: Batemannia nivalis major, from M. Louis Van Houtte; Vriesia fenestralis, from M. Van Houtte; Globba coccinea, from M. De Smet-Duvivier. Certificates of culture: Maranta Makoyana, from M. Ad. D'Haene; Vanda Lowi, Cypripedium Lowi, Cypripedium laevigatum, Cypripedium Parishii, from M. Beaucarne d'Eename; Philodendron Sellowii, from M. Pynaert Van Geert. Honourable mentions were accorded to Abutilon Thompsonii fl.-pl., from M. F. Desbois & Co.; Begonia hybrids, from the same exhibitors; Aerides Rohanianum, from M. Aug. Van Geert, père; Cattleya aurea, from M. Aug. Van Geert, fils; Collea species, from M. Vervaeck & Co.; Phyllanthus Chantieri, from M. Aug. Van Geert, fils.

Royal Horticultural Society of Ireland.—The annual meeting of this society was held on November 13, the Duke of Leinster in the chair. Mr. Nathaniel Powell read the report, which congratulated the society on the marked and progressive excellence of its exhibitions, but stated that the financial results have been exceptionally small and unsatisfactory. All liabilities have been cleared off, but in order to do this it was found necessary to draw upon the reserve balance to the amount of £155 7s. 2d. The deficit in the exhibitions for the last five years must principally be attributed to a somewhat inconsiderate change made in Rule 6 about that time, by means of which members have since been able to crowd the exhibitions with non-paying visitors to the number of nearly 3000 over and above the personal admission of some 300 members themselves. It was therefore proposed that in future each member should have a free admission and one free ticket for each exhibition, with the further privilege of competing for all the society's prizes without payment of entrance money, such as non-subscribers have to pay for every class in which they may compete. It is intended to hold most of the exhibitions of the coming year in the Rotunda grounds, the central position of which makes them equally convenient and accessible to exhibitors and visitors from all parts and sides of Dublin. The proceedings then terminated.

Pompones Chrysanthemums.—It is but seldom that this beautiful race of varieties is exhibited in perfection even at the principal Chrysanthemum shows. The finest we ever remember seeing at a show were those at Walton-on-Thames last week. In the class for twelve blooms there were three collections, all so admirably grown, that it was a difficult task for the judges to say which was best. The first prize collection was from Mr. Lavers Smith's gardener (Mr. Plowman), who had the following fine selection of sorts: Golden Mdme. Marthé, Crimson Perfection, Marabout (a beautiful white with fringed florets), President, Mrs. Flutt, Mrs. Talfourd, Mdme. R. Pignez, and Mdme. Marthé. There were all represented by enormous blooms for pompones, and being set up elegantly in clusters of threes with the foliage had an extremely pretty effect. Mr. Plowman not only grows pompones to perfection, but the other classes of Chrysanthemums, he being the chief prize winner at the show, which was, as usual, a good one. Some admirably trained plants (half a dozen) were shown by Mr. Lavey, and we were pleased to see that special prizes were offered for dwarf untrained plants suitable for embellishing a conservatory without requiring so much space as trained plants. Some of the untrained plants

shown were highly creditable, being dwarf, well-furnished with luxuriant foliage, and carrying very fine flowers. The Japanese race seems to be the favourite sort for this style of culture.

Gardeners' Benevolent Institution.—From the "appeal" that has already been given in THE GARDEN, it would be seen that our object is to raise the funded property to £20,000. We are within a reasonable distance of reaching that amount, the sum of £420 being all that is required to be secured before December 31. If this amount be not forthcoming we shall lose the sum of £500 promised by an unknown, but generous donor. Should we be unsuccessful in our efforts, the wish dear to the hearts of the committee will be delayed for at least two years, and that would, in their opinion, be a disastrous blow to the interests of the institution. In making you acquainted with this state of affairs, we trust that you will see the paramount necessity of affording us if possible a little help to attain the object in view. To those generous friends who have already responded we return our best thanks. To those, who from various causes have delayed their reply, we can only say that "charity is twice blessed; it blesseth him who gives and him who receives;" and that we hope and look for their aid in this work of benevolence, so that the committee may be enabled to communicate to the subscribers in their report at the general meeting in January the great pleasure and gratification they will have of recommending during the ensuing year an increase to the amount of the annual pensions.—EDWARD TIDSWELL, Treasurer; JOHN LEE, Chairman.

—It appears to me that the best method for raising money for the augmentation fund has not been tried. I mean a bazaar and fancy fair. One was held a week or so ago in this small town of 15,000 inhabitants for a local object and over £2000 was raised. Now £500 would more than cover the sum required to raise the funded property to £20,000—the required amount. But why stop there? If a few pounds more were secured it would not matter, and I feel sure that if a strong pull together was once begun and the thing wisely and well started it could be brought to a very successful issue. The Horticultural buildings at South Kensington could, I should think, be had for such a purpose and for any length of time required, for if they exist for any useful purpose at all, surely it is for the benefit of the gardening fraternity. The ladies' sympathy could be easily enlisted, and the ready help of nearly everybody who would be appealed to would be quite a foregone conclusion. I for one would undertake to sell a few pounds' worth of tickets—fully as much as the neighbourhood ought to take. Let the matter be thought over, and let the gardening world for once in a way show that if properly roused it can do something to be proud of.—T. SMITH, Nerry.

* * We have been requested by Mr. Cutler to announce, in order to meet the wishes and convenience of many people who have collecting cards for the augmentation fund of this institution, that the time for closing the list for this year has been extended to Monday, 15th December.—ED.

		£	s.	d.
Donations to augmentation fund, inserted November 8		17	0	6
Second list of subscribers.				
Mr. R. Dawes, Temple Newnam, Leeds	..	0	10	6
Miss Pindar, Mainstone, Leebury	..	1	0	0
Mr. Bowen, Mainstone, Leebury	..	0	5	0
Rev. J. Buckle, Ashperton, Leebury	..	0	10	0
Mr. C. Riley, Fuley Court, Leebury	..	1	0	0
Mr. C. Lea, Parkfield, Worcester (second donation to this fund)	..	5	0	0
Mr. J. D. Perrins, Great Malvern	..	5	0	0
Lady Elizabeth Biddulph, Leebury	..	1	0	0
Mr. Basil Masfield, Leebury	..	0	5	0
Sir Joseph Bailey, Bart., M.P.	..	1	1	0
Mr. A. Buck, Worcester	..	0	5	0
Mr. A. Ward, Stoke Edith	..	0	10	0
Mr. C. A. Hewitt, Hopend, Leebury	..	1	0	0
Mr. J. Wickens, Donnington Hall	..	5	0	0
Mr. M. Biggs, Gardens, Garnstone	..	10	0	6
Mr. F. Hells, Foreman, Garnstone	..	5	0	0
Lady Emily Foley, Stoke Edith	..	5	0	0
Mr. G. H. Green, Enville, Stourbridge	..	10	0	0
Total	..	45	12	8

—W. COLEMAN, Eastnor Castle, Leebury.

The Garden Annual for 1885.—Great pains have been taken to make this very complete in all ways this year. We believe it to be the most correct and full directory of British gardens, their proprietors, the nursery and seed trades, and gardeners, that can be produced in such a simple way. Of course there are critics of such things who do not remember that there is such a thing as a death rate; that places change hands, or are not occupied, and that people also change their gardeners—some with unfortunate frequency. But all who do not quite forget these facts and the other difficulties of such an undertaking will confess that "The Garden Annual" fulfils a want in a satisfactory way. The features we most refer to in this notice are: An alphabetical list of nurserymen and seedsmen, florists, horticultural builders, engineers, and of the horticultural trade generally. The principal gardens and country seats in Great Britain and Ireland, arranged in the order of counties, extended and corrected to date. Alphabetical list of country seats and gardens in the United Kingdom, with names of their owners, very much extended and corrected to date. Alphabetical list of head gardeners in the principal gardens of the United Kingdom, re-written with nearest post towns added. This list has been augmented by nearly 800 names and addresses.

English v. American fruit.—I have before me a price list of a Liverpool fruit merchant who imports American Apples largely. This list is dated the 7th of October, and states that American Apples are coming across in very good condition. The price for table fruit is quoted at from 25s. to 30s. per barrel (containing 120 lbs.), and fine cooking Apples at from 15s. to 20s. Contrasting these prices with those at which English Apples were selling at the same time, it would appear that American fruit must be vastly superior to that grown in England, or our fruit growers must be placed at disadvantages that to me appear to be inexplicable. Here in Somerset, at the end of September, any quantity of Apples that would keep until Christmas could have been purchased at one-third the price realised by the American fruit. It appears to me that our fruit growers do not make use of the facilities afforded them for getting their fruit to the proper markets, or is it that consumers are willing to pay a higher price for imported fruit than for that which is home grown? If they can secure fruit of better quality at an advanced price, there is nothing to be said against it, but one can hardly understand how that can be so.—J. C. C.

QUESTIONS.

5279.—**Vase plants.**—Will some of your correspondents kindly give me the names of a few of the most suitable vase plants? I want them for cultivating in terra-cotta vases in a garden at Brixton.—C. U.

5280.—**Palms.**—Can any of the readers of THE GARDEN tell me where I can get fruit of *Lodoicea sechellarum* and *Lecythis Ollaria*, and about what would be the price? Any advice will greatly oblige.—H. G. DOEBNER, *Hacking, near Vienna*.

5281.—**Killing ants.**—Will any of the readers of THE GARDEN kindly tell me what will destroy exotic ants—something not injurious to plants? We have been trapping them with sugar and water, but the process is too slow; they seem to dislike going into it.—R. T. R.

5282.—**Peaches.**—Will some of your correspondents assist me by naming six of the best early Peaches for pots, six of the best early kinds for outdoors, six of the best mid-season sorts, and six of the best late varieties? I have consulted the pages of THE GARDEN, but I am still at a loss to know which is the very best to grow.—GEORGE BARNES, *Sunbury*.

5283.—**Ampelopsis sempervirens** (*alias* *Vitis striata*?).—Ware's last catalogue says it has "the same clinging nature" as *A. Veitchii*. Is this so? A genuine evergreen *Veitchii* would be a delight, but a plant, sold as *sempervirens*, which I had three years ago, and which died off somehow, did not, to my inspection, form any organs of adhesion.—T. T.

5284.—**Fruit trees for a north wall.**—We have a stone wall facing north-north-east furnished with Pear trees, which are very large and old and bear no fruit. The soil is very wet and heavy, and we are thinking of doing away with the Pear trees. We would therefore be glad if some of your readers would give us some information as to what would do best in their stead. Would Gooseberries do? We do not want Morello Cherries.—J. A. C., *Waterford*

PARKS & PUBLIC GARDENS.

EPHING FOREST.

SOME demur having been made as to the sale of certain outlying portions of this forest by the Corporation, Mr. T. J. Nelson, of Guildhall, refers to the matter in the *Times* as follows: When the Epping Forest Act was passed in 1878 it was foreseen that there were many small strips of land lying a long way from the main body of the forest, the preservation of which it was useless to impose upon the conservators, as they would be sure to be absorbed in the highways or become receptacles for nuisances. The Act accordingly provided that, as to any of such strips or pieces of land pointed out to him by the conservators, the arbitrator might direct how they should be dealt with. The first idea of the conservators was to hand them over to the various local authorities within whose district they are situate, but it was found they had no legal authority to take charge of them, and so more than two years ago the arbitrators made an order directing the conservators to sell them and to carry the proceeds to the credit of the Epping Forest Fund. The area of Epping Forest is 5531 acres, while the total of these strips, situate over many miles, is under 6 acres, and the proportion of those directed to be sold to those that are to remain is very small. From time to time, as the adjoining owner has desired to have these strips, many of which are as small as two or three perches in extent, they have been sold to him. They were all carefully inspected by the conservators before they were determined to be given up as part of the forest, and I believe Sir Arthur Hobbhouse took the trouble to visit every one of them himself before he made his order. They are not, and have not been since the arbitrator's final award, any part of Epping Forest, as has been asserted, but are expressly excluded from it, and the only duty of the Corporation is to get rid of them.

Preston Park, which was recently purchased by the Corporation of Brighton at a cost of over £50,000, was formally opened to the public on Saturday by the mayor, Mr. Alderman A. H. Cox, in the presence of at least 20,000 people. A procession, in which the members of the Town Council and their friends took part, made a tour around the park. At the southern entrance a halt was made to enable the mayoress to plant a Chestnut tree presented by Lord Salisbury, at a short distance from one sent by Mr. Gladstone, and planted by the same lady a few weeks ago. Prior to the commencement of the ceremony the mayoress was presented with a silver spade. After the tree had been planted a move was made to another part of the park, where a square had been formed by the military and naval forces. Here the mayor was presented with a silver key and congratulated on the acquisition of the park for the public during his year of office. The mayor having declared the park open amidst hearty cheers, the bands played the National Anthem, and the bodies forming the procession moved out of the park and returned to their respective headquarters. A number of roads have been made in the park and flower beds laid out, and in addition a fine horse ride has been cut.

Southwark Park.—It is said that the Parks Committee of the Metropolitan Board of Works have viewed this park with the idea of forming a lake, and have gone as far as selecting the site. The representative of the local vestry has stated that he has every reason to believe that this proposal would be successfully carried out. Where will the Board of Works put a duck-pond next? Perhaps in the Embankment gardens. There would be quite as much propriety in doing so as to try to form an ornamental lake in a handful of space such as is contained in Southwark Park, which is already too small to meet the requirements of the locality, and a lake would not only curtail this limited space, but could never be made really ornamental. There are better ways of disposing of the surplus funds of the Parks Committee than

by such a proceeding; let them be judiciously applied in making the parks more enjoyable by planting suitable trees and shrubs.

OBITUARY.

MRS. MILES.

WE regret to announce the death of this accomplished lady, widow of the late rector of Bingham and mother of Mr. Frank Miles. Mrs. Miles had a singularly graceful and true touch as a flower painter, and did a good deal of beautiful work in that way, notwithstanding her numerous home duties. Of her qualities as an artist our readers have some means of judging by her plates in THE GARDEN of Daffodils (p. 202, Vol. XV., 1879), Veronica, Japanese (p. 448, Vol. XIX., 1881), Crinum Mooreanum (p. 260, Vol. XIX., 1881), and Leichtlin's Lily (p. 236, Vol. XXI., 1882). Mr. Ruskin had the keenest delight in her command of tint, and bought some of her sketches for his school at Oxford, and Millais had a high appreciation of her flower drawing. Her father, the Rev. C. Peach, was a well-known gardener and fruit grower, and her brother is the Rev. C. Peach, of Malton, also known among the good gardeners. She was taken suddenly and seriously ill on the anniversary of her husband's burial, and died a few days afterwards, on Saturday, November 15, at Shirehampton, near Bristol, whence she removed after the death of Canon Miles at Bingham Rectory last year.

MR. WILLIAM PARKER HAMOND, of Pampisford Hall, Cambridgeshire, and of Haling, near Croydon, Surrey, formerly high sheriff of the former county, died on the 12th inst. at his seat near Cambridge. He was the only son of the late Mr. William Parker Hamond, and was born in 1827. Mr. Hamond was educated at Eton and at Trinity College, Cambridge, and was called to the Bar at Lincoln's Inn in Michaelmas term, 1853. He was also well known as one of the most extensive planters of coniferous trees in England.

WE learn, just as we are going to press, that Mr. Bockett, of Stamford Hill, died at his residence there on Wednesday last, the 19th inst. Mr. Bockett has long been known in connection with Orchid culture, and his collection is remarkable both for extent and richness of variety.

LATE NOTES.

Odontoglossums (*G. H. Cole*).—All three blooms represent very good forms. No. 2 is the most distinct, the spots being unusually large and bright. The number of flowers on each spike (eighteen and twenty) is considered an average number.

Crocus nudiflorus.—Can anyone in the neighbourhood of Nottingham send me some bulbs of this *Crocus*? I have two or three bulbs of the white Martagon Lily to spare, and should be glad to give them in exchange.—M. P. FORSTER, *Lesbury, Northumberland*.

Diseased leaves (*R. C. St. Boswell's*).—We have examined your leaves carefully. They appear to be scorched or scalded, perhaps by the sun shining on them whilst wet. The white material, which looks like mildew, is inorganic, and probably something which has been syringed over the plants. There are no traces of fungi or insects.—W. G. S.

Names of plants.—*M. Ellis*.—*Euonymus europæus*; appears to be a variety of *Rhododendron Nobleanum*, which is an early-flowering kind.—*J. Lindsay*.—1, species of *Argemone* (send in flower); 2, *Hibiscus Trionum*; 3, *Alonsoa Warscewiczii*; *G. Harris*.—1, *Alchemilla alpina*; 2, *Primula Sieboldi* (*cutusoides amens*);—*E. J. H.*—1, *Cryptomeria japonica*; 2, *Thujopsis dolabrata*; 3, *Thuja gigantea*; 4, *Cryptomeria elegans*.—*Hortus*.—Please send specimens of your Ferns again.—*W. Shepherd*.—Second flowers of *Laburnum alpinum*.—*E. F. G.*—1, *Hoya carnosa*; 2, *Begonia metallica*; 3, *Platycodon alceiorum*; 4, *Eupatorium Fraseri*.—*T. M. F.*—*Dendrobium* is probably *D. cariniferum*, but the specimen is too small to identify with accuracy; name of creeper next week.

Names of fruits.—*J. D. M.*—1, not known; 2, *Scarlet Russet*; 3, *Barcelona Pearmain*; 4, *Fearn's Pippin*; 5, *Cox's Orange Pippin*; 6, *Pears too much decayed*.—*R. T. Myers*.—1, *Striped Beeding*; 2, *Wellington*; 3, *Golden Codlin*; 4, *Bedfordshire Foundling*; 5 and 6, *Reinette du Canada*; 7, not known; 8, *Cook of Wick*.—*G. Mitchison*.—*Yorkshire Greening*.—*J. K.*—1, *Cook of Wick*; 2, *King of the Pippins*; 3, *Alfriston*; 4, *King of the Pippins*; others next week.

"This is an Art

Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

BELGIAN WAY OF PACKING FRUIT.

THE following practical remarks on the packing and carriage of some of the more delicate kinds of fruit by M. Ed. Pynaert, professor in the School of Horticulture at Ghent, will, we have no doubt, be read with interest: "Fruits destined for carriage should not," he says, "be too ripe, and all bruised or attacked by insects should be set aside, as they are certain to spoil the rest. They should be carefully picked over, one by one, each fruit being at the same time gently brushed over with a soft brush, except in the case of fruit covered with bloom, such as Plums or black Grapes, or those which are very soft, such as Raspberries and Mulberries. The fruit should be picked a day or two beforehand and laid in a dry, airy place in order to get rid of a portion of its superabundant moisture. The materials which are used in packing to prevent the fruit from rubbing should also be thoroughly dried. It is scarcely necessary to add that, in gathering, the fruit should be gently laid in a broad basket having in the bottom a thick layer of soft Moss covered with tissue paper, that they should not be allowed to touch, and must not be heaped on one another in layers. The boxes in which the fruit is to travel must not be too large, as it is an essential condition that it should be packed closely enough to prevent the least shaking, an arrangement which would render the boxes inconveniently heavy if they were of too great size. When several kinds of fruit, as Peaches, Raspberries, Cherries, Grapes, &c., are to be sent together, there should be a separate box for each, unless when the quantity is very small, in which case they may be laid on trays or false bottoms in the same box. The strength and solidity of the boxes should be proportioned to the length of the journey and the amount of rough treatment they are likely to meet with. They should be made of any soft timber except deal, as, generally speaking, there is a resinous odour from it which might affect the natural perfume of the fruit. For constant use we would recommend boxes with hinged lids, and locks of which both the sender and the consignee should have keys. In winter the fruit should be protected from frost by covering the boxes with an outside coating or layer of Moss or straw at least $2\frac{1}{2}$ or 3 inches thick and surrounding the whole with matting. Peaches, if picked two or three days before they are perfectly ripe, will bear a journey of several days' duration well. Clingstone Peaches and Nectarines should be quite ripe when gathered, and will keep longer than freestone Peaches. In packing, each fruit should be put up separately in tissue paper. The fruits should then be laid on a bed of bran or good dry, white sawdust, from which the finer particles have been sifted. They should then be placed about half an inch apart every way and covered up with bran or sawdust, which should be pressed into all the interstices. On this layer of bran or sawdust another layer of fruit should be placed and treated in the same way, but not more than three, or at most four, layers of fruit should be packed in the same box. The box should be

gently shaken from time to time while packing, so as to settle the contents and fill up all crevices; it should never be more than 19 inches long, 13 inches wide, and 11 inches deep. A box of this size will hold about five dozen Peaches. When the quantity of Peaches to be sent is considerable, and more especially in cases where a supply has to be sent regularly to a great distance, the packing must be of a more elaborate kind. Each box should be made with a number of trays or false bottoms, so that the fruits may be placed in separate layers with a space of 3 inches or $3\frac{1}{2}$ inches between them. The trays or false bottoms rest on ledges nailed on the inside of the box, and the intermediate spaces are divided, like a chess-board, into small squares of 3 inches or $3\frac{1}{2}$ inches, inside measurement, in each of which is placed one Peach, wrapped in tissue paper and carefully packed firmly in its place with tow or bran. Apricots and Plums, not being so delicate as Peaches, require less care. They are wrapped in tissue paper and packed in layers, with dry Moss between the layers. When the Apricots are large they should be packed like Peaches, and this should always be done when they have to travel long distances. Plums will keep for some time, some varieties longer than others. Apricots also will keep longer than Peaches. Cherries should first be washed in a basin of water with a very soft brush; they should then be wiped dry, laid between two sheets of tissue paper, and packed with alternate layers of tow. Grapes may be packed like Peaches. The bran or sawdust settling down between the fruit prevents injury from rubbing, but it has the disadvantage of always adhering to the latter to a greater or less extent. When the fruit is perfectly dry it may be blown off, or the fruit may be in the first place done up in tissue paper. When Grapes are sent by rail, and the distance is not very great, as from Paris to Brussels, it is generally considered sufficient to pack them in layers, two or three in a box, with a little Moss between them. Raspberries will not bear a longer journey than one of a couple of days' duration. They should be ripe, but not too ripe, and should be packed immediately after they are gathered. They are packed in tow like Cherries, being first wrapped separately in tissue paper. They should not be packed in more than four or five layers, as they are very liable to become heated. The same remark applies to Mulberries and Gooseberries, but the last named are not so delicate, and will keep longer. Figs will keep for some time. They should be packed in dry Moss."

ORCHARDS IN FRUIT-SICK SOILS.

MUCH attention has lately been paid to the selection and cultivation of suitable varieties of Apples; therefore, just now we can dispense with any further reference to these matters. But there is a good deal that may yet be said on other points in connection with this subject. No one has, for instance, sufficiently insisted on the need there is for new sites for our orchards. This is, however, important, for I am satisfied if we are in this country to derive the benefits from an extension in the way of fruit culture which so many are advocating, there must be a wide departure from the course that has been so long followed. The practice of retaining old orchards must be given up, and fresh sites selected if we are to reap a full measure of success. No argument is necessary to show how short-sighted the policy must be which advocates the planting of young trees in a tree-sick soil, yet in most of our fruit growing districts this system has been going on for gene-

rations, and I see no hope of improvement. Landowners should insist on stipulations that shall secure the destruction of old orchards and the replanting of new ones on land that has not previously grown fruits. These remarks, I ought to say, do not apply to growers for market; they are meant to apply more particularly to the farm orchards of Hereford, Somerset, and Devonshire, and I think all will admit that the condition of the majority of orchards in these counties is such that no intelligent foreigner would gain the impression that we were capable of managing fruit trees in a proper manner. Of course while there was no depression in agricultural matters, a few acres of orchard land that did not yield a fair return for the outlay was not of much consequence, but now people have to look to something else than Corn with which to pay rents and taxes. The energies of sufferers from bad times may be profitably devoted to fruit culture, but it must be conducted on different lines from those hitherto followed.

THE REQUIREMENTS OF FRUIT TREES form no exception to those of any other crops. Their wants must be studied if their cultivation is to be made a source of profit. Suitable sorts must be selected to meet local conditions. A sheltered situation and good soil must also be provided, and the planting and after management must be conducted in a liberal manner. In fact, the care and intelligence usually devoted to other crops must be exercised if we are to realise the full extent of the benefits that ought to accrue from an extension of Apple culture. Those, however, most interested in the land must be the first to move in this matter. If landlords find it necessary to have covenants that will insure a proper course of husbandry as regards corn crops, it is equally essential that the same course be adopted in regard to Apple orchards; and what is there to prevent this? As at present arranged most landlords insert such clauses in leases as bind the tenant to replace any dead trees and keep the orchards well attended to in other respects. Therefore it would be easy to make it imperative to plant a certain number of acres on each farm with Apple trees once in seven years on land on which fruit trees have not been grown before. There would be no hardship in that, provided the terms between landlord and tenant were just and equitable.

AS TO CULTIVATION, I only need stop to say that a change in the arrangement of the trees is most desirable. In the majority of cases the trees are planted in the first place much too far apart. The most fruitful orchards are those in which the trees are sufficiently close together to shelter each other. This would seem to show that the best kind of shelter is that secured by the trees themselves. If I were about to plant an orchard I should select trees on stems 5 feet high, plant them from 16 feet to 20 feet apart each way, and feed off the Grass with sheep. Much of the fruit supplied to local markets in the west of England is grown in small orchards and gardens where the trees stand even closer than the distances just named, and no particular form of tree is preferred. Some of them are half bush and half standard, but in many cases the branches touch and mingle with each other.

The next question which arises in connection with this subject is, Will it pay to grow Apples? or rather will it pay to extend the land now occupied by them? The answer must depend entirely upon the facility of obtaining a market for them. Undoubtedly fruit growing would pay provided the grower could get his just share of the proceeds. Compared with what the public pays for imported fruit at present, small growers do not obtain sufficient money for their produce, yet from small gardens the best fruit comes, because as a rule more attention is paid in them to selection than in large ones. Where, however, people reside in outlying districts, it is difficult to find a market for their produce, which is often too small to make it worth while to incur the expense of taking it 8 miles or 10 miles to the nearest market. They therefore sell their fruit at home for what they

can get for it. People hardly believe me when I say that at the end of last September I could have bought plenty of Apples that would keep till Christmas at 4s. per bag of 120 pounds. I do not blame them for their incredulity, but I can assure them that that was the case.

AS TO THE EXTENSION OF APPLE CULTURE, I have no hesitation in saying that it is not wanted until suitable markets are provided. In the western counties we have a good soil and climate, and if we only set about growing fruit in the right way I believe it could be had equal to any that is imported, but we must have better markets. Some think that Apples grown in England are not equal to those imported. I very much doubt, however, if better fruit was ever imported than that which was to be seen at the Apple show at Exeter in October last, and again at Yeovil and Taunton Fruit Shows, held on the 18th and 20th inst. The Apples shown on these occasions proved that nothing was wanting in the west, at least, to produce fine fruit. If the selection and management are right, it is just as easy to grow fruit on a large scale as on a small one, and given a suitable market, good Apples would in a few years be forthcoming in any quantity. J. C. C.

PLANTS IN FLOWER:

Autumn flowers.—Still some Tea Roses.—Madame Falcot and buds of Rubens. Three days ago I counted nearly eighty plants and shrubs in flower.—G. J., Nov. 20.

*. The Tea Roses very good indeed.—Ed.

Ceanothus Gloire de Versailles.—I send you a spray of this beautiful Ceanothus which is planted against a south wall. It is 8 feet high and is a mass of blue. Next it is Solanum jasminoides, a mass of white blossom. The two together contrast well. We have twice had 10° of frost here this autumn. Our Dahlias have long since died down.—M. A., Hall Court, Botley.

*. Beautiful sprays of this Ceanothus, which is unquestionably the finest of all the hybrid varieties and one of the hardiest. The fact that Solanum jasminoides is now flowering in the open air speaks much for its hardiness.—Ed.

Linaria triornithophora.—A few months ago I sent you some blooms of this Linaria with a hope it might be brought into notice as an exceedingly pretty border plant. I now send a few more blooms, just cut from plants out-of-doors, both to show the length of time it keeps in flower as well as the great variety of colour.—A. RAWSON, Windermere.

*. The specimens which Mr. Rawson now send are almost as fine as those he sent in the summer. There are two distinct varieties, one with deep purple-maroon flowers, the colour of the other being a delicate pink with the mouth and spur of a reddish purple. Both are extremely pretty, and we hope that Mr. Rawson's note may lead to bring a neglected plant under the notice of hardy flower lovers.—Ed.

Schizostylis coccinea.—A handful of spikes of this bright autumn-flowering plant has been sent to us by Mr. Cannell from his nursery at Swanley, with a note saying that "it is the best cut flower to continue in perfection for a week in a warm room." We have proved what Mr. Cannell says; for the last six days the flowers have successfully expanded widely in a warm room until all the buds are exhausted on the spike. Such a beautiful crimson flower as this ought to be grown in quantity in every garden, more especially as it is so easily grown and flowered. It likes a light, rich, warm soil, and if the weather is dull at flowering time the spikes had better be cut and placed in a warm room.

Kniphofia foliosa.—This is probably best known under its old name of K. Quartiniana. Although, perhaps, not so handsome as K. caulescens, a nearly allied species, it is not without merit. In warm, sandy soils and in sheltered positions it is seldom harmed, even during severe winters, but where the soil is retentive it should be protected. Unlike the others, which all grow upright, the stems of this species are produced at almost right angles with the base. The flower-stalks, however, slowly turn upwards when quite young, and assume a vertical position, which they afterwards retain. At Kew, a large healthy plant of it is throwing up numerous spikes of its light red salmon-coloured flowers. The young shoots if taken off now may be easily rooted in sand.

Impatiens Hookeriana.—This is the largest flowered and one of the most beautiful of Indian Balsams, but unfortunately it is of comparatively little value to English cultivators, because of its being somewhat difficult to flower. It was introduced more than thirty years ago from Ceylon to Kew, where it flowered soon after its arrival, and was figured in the *Botanical Magazine*, t. 4704. Since that time, although cultivated in several gardens, a plant of this Impatiens bearing flowers has been of extremely rare occurrence. We saw it in Mr. Bull's nursery at Chelsea several years ago, and now again we find it in flower at Kew, where Balsams have recently received much attention. The Kew plants of it are about 1½ feet high, somewhat bushy in form, the branches being stout, succulent, and green. The foliage is of the ordinary Balsam type, about 3 inches long, and over an inch in width. The flowers are borne on erect peduncles near the ends of the shoots, from two to six flowers being on each stalk. They are large, white, except a few streaks of red on the lower divisions, and may be fittingly likened to a good flower of *Odonoglossum Roezli*, with the addition of a long, curving, tapering spur. Altogether it is a handsome flowering plant, but difficult to bloom. In Ceylon this Balsam forms a shrub often 5 feet in height, with branches as thick as the finger, and, of course, plenty of flowers in the flowering season. India, as well as Ceylon, literally teems with distinct and beautiful Balsams, many of which would, if introduced, prove as useful for garden purposes as, for instance, the African I. Sultani has proved to be. The species, too, comprise a host of varieties. Sir Joseph Hooker says: "It would be difficult to indicate another genus in the vegetable kingdom presenting among its species so many and such different modifications of structure and of which the species are so universally and so excessively prone to vary."

NOTES OF THE WEEK.

Gardeners' Benevolent Institution Augmentation Fund.—If gardeners in general were as energetic in collecting money for this fund as Mr. Coleman, of Eastnor Castle, Mr. Owen Thomas, of Chatsworth, and his neighbour, Mr. Swaine (cashier to the Duke of Devonshire), the £420 needed to complete the £20,000, the sum required to be raised, would soon be obtained. Mr. Coleman has collected no less than £49 4s. 6d., and Mr. Thomas and Mr. Swaine £40 19s. 6d. The latter sum has been collected among some seventy subscribers.

Exhibition of flowering bulbs at Haarlem.—In 1885 the General Society for Bulb Culture at Haarlem will celebrate the fourth century of its existence, and on that occasion an exhibition will be opened on a large scale—one of the quinquennial shows of the society. Similar exhibitions took place in 1875 and 1880. That now announced, however, will surpass all its predecessors, and if it realises the expectations of its promoters it will be the best show of flowering bulbs and tuberous-rooted plants ever held in Haarlem. It will be open from March 20 to 24. In the schedule of prizes there are 140 entries, for which 381 medals are offered (gold, gilt, silver, and bronze), and to some of them money prizes are added, the value being more than £500. There are 87 medals for Hyacinths, 60 for Tulips, 17 for Narcissus, and smaller numbers for Crocuses, Fritillarias, Snowdrops, Leucojums, Scillas, Chionodoxas, Muscari, Erythroniums, Anemones, Ranunculuses, Liliums, Gladioli, Irises, Helleborus, Hepaticas, Trilliums, Convallarias, Hoteias, Spiræas, Dicotyles, terrestrial Orchids, Pæonias, Amaryllises, Imantophyllums, Eucharis, Orchids, Gesneraceæ, Begonias, Anthuriums, Caladiums, Callas, Cyclamens, Tropæolums, Lachenalias, Sparaxis, Phormiums, and Yuccas, as well as for miscellaneous subjects, rare or new bulbous and tuberous-rooted plants. Moreover, large numbers of medals are offered for table decorations, bouquets, arrangements of flowers, hanging baskets, &c., with this condition that all the flowers of which the

arrangements consist ought to be those of bulbous or tuberous-rooted plants. This show will doubtless prove a great attraction to all those who take an interest in bulb-growing. It will convey a better idea of the kinds of spring bulbs grown in the neighbourhood of Haarlem than any show hitherto held there, and will be well worth going to Holland to see.

Red-spotted Potatoes.—On examining the Potatoes earthed upon the Jensenian plan at Chiswick many tubers were found to be spotted internally with reddish brown, no symptom of the disease being visible on the surface. A large proportion of certain crops both in Yorkshire and Norfolk have this autumn been found to be unsaleable from this cause. The scientific committee of the Royal Horticultural Society would be glad of any information on the subject, especially (1) as to the amount of crops thus diseased, (2) the character of the soil, (3) nature and quantity of the manure used, (4) whether early or late varieties are most attacked, (5) name of the varieties most affected. The disease appears to be quite distinct from the ordinary Potato disease. Communications are requested to be sent to the Rev. G. Henslow, Drayton House, Ealing.

Cranberries.—The annual imports of American Cranberries have made their appearance in the London markets. A sample of fruit of a variety called the Black Duck, grown at Woodville, Nova Scotia, has been sent to us by Mr. Thorpe, one of the fruit salesmen in Covent Garden. This is a variety of the large American Cranberry (*Vaccinium macrocarpum*), having globular red or carmine fruits about the size of small Cherries. It is an excellent kind with which to make jellies or preserves. Cranberries are comparatively unknown fruits in England; only in very large gardens do we find Cranberry beds, and these often do not receive much attention. In America Cranberry culture forms an important industry, and large tracts, often many acres in extent, are devoted specially to it. As Cranberries require a moist peat for their successful culture, the first preparation of the ground is an important consideration, and sometimes expensive. There is a little book on Cranberry culture by J. J. White, published by Orange Judd & Co., New York, in which there is much useful information on the subject. Its perusal may tempt cultivators in this country to devote a little space to Cranberries in localities where the necessary conditions for their successful culture exist.

QUESTIONS.

5285.—**Town trees.**—The head master of Clifton College has promised to plant with trees and shrubs a piece of land in Bristol which has recently been purchased by the Corporation of Bristol. He is anxious to do it well and to secure the greatest variety possible of plants beautiful either for foliage or flower which will grow in a rather low and damp part of a large city. Will some of your readers have the kindness to supply him with lists of such plants as their experience has shown to be suitable?—G. H. W.

5286.—**Oil lamp stoves.**—We are looking for a good oil stove for conservatories, &c. We have tried many American stoves, but can find none to do what is claimed for them. They smoke the house and give out an offensive gas, which smells badly. We see two different oil stoves advertised in THE GARDEN—one Rippingill's Patent, made by the Holborn Lamp Company, and the other made by the Albion Lamp Company, Birmingham. Can any of your readers tell us anything about these stoves? Will they do for conservatories? and do they work satisfactorily?—J. V., New York.

5287.—**Abortive Amaryllis blooms.**—I have just taken charge of a collection of Amaryllises, good named sorts. They are all in various stages of flowering and growing quite strongly, but, strange to say, as yet not one of them has perfected a single flower. Some of them just show colour and then wither; more of the flower-stems grow from 6 inches to 10 inches high and then become abortive. In all cases the flower-stems keep fresh and sappy. The plants are required to be in flower from August onwards. They have been grown all summer on the side stage of a span-roofed house in a temperature of from 50° to 55° and distant from the glass about 7 feet. They have not been dried off; all that lost their foliage were kept a little dry. I turned several out of their pots and found the roots in all cases in good active condition; they have not been potted for two or three years. I will be very much obliged to some of your correspondents if they will favour me with their opinion on this matter.—H. K. Glasbeugh.

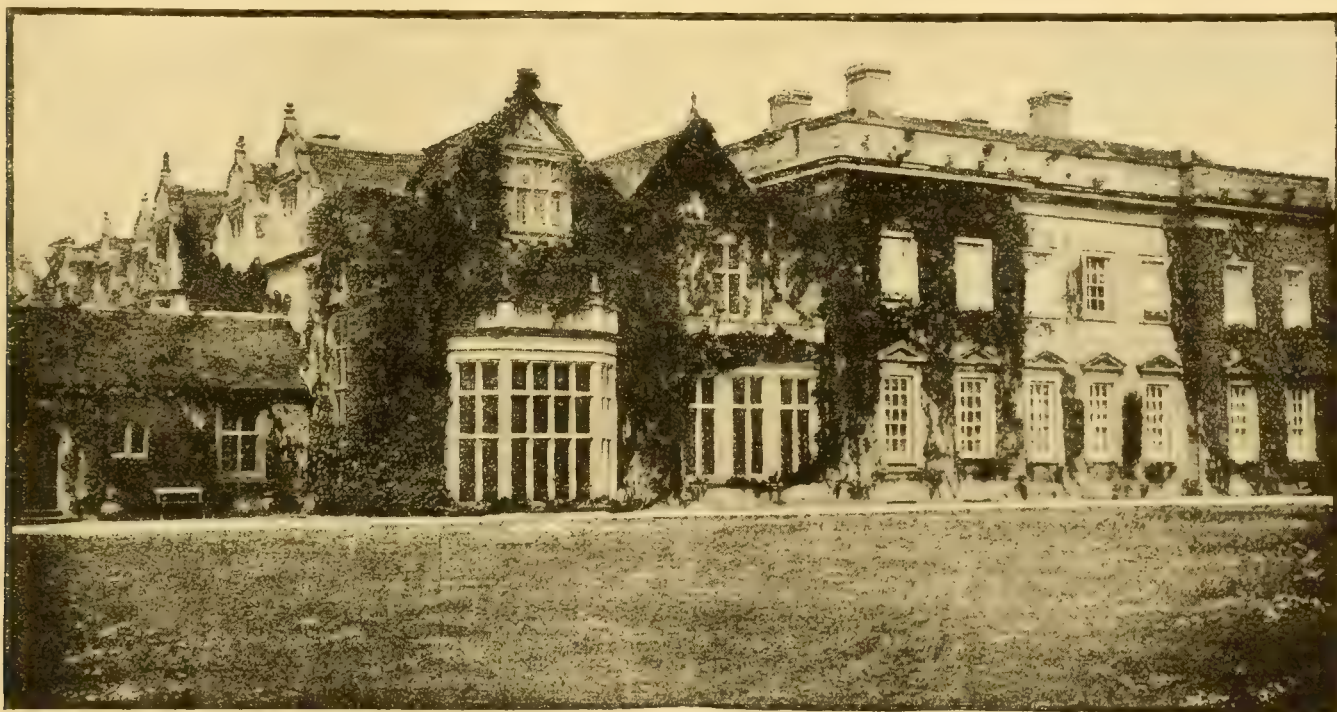
WARWICK PRIORY.

THE Priory, unlike Warwick Castle, only shows in part its ancient character, the garden front being modern. As a residence in the very heart of a town, and therefore circumscribed in limit, it is hard to surpass, and the improvements that have been effected in the last two decades have all been in the right direction. Formerly it was the site of the church and priory of St. Sepulchre, but in the reign of Elizabeth it passed into the hands of a lucky plebeian yeoman Fisher, and since then, after an interesting series of change of ownership, it has passed into the hands of Mr. T. Lloyd. At any season you may visit this priory you may take it for granted that Mr. Greenfield, an eminently practical gardener from that best of all schools, Dalkeith, will have something out of the common to show. Perhaps, however, the spring season is the best time. No one can help noticing how well the grounds harmonise with the contour of the house. On the exposed side they slope down to the railway, which is excluded from view by a woodland-like walk, which circles round about midway up the incline. In May on either

that an avenue has lately been made with it. There are also forty varieties of Holly, including fine specimens of uncommon ones. Laburnums and Scarlet Thorns are very effectively grouped and planted, and there are not too many of them, as is very often the case. I did not see any Coluteas however. This pretty shrub is not nearly so well known as it deserves to be. Together with the Sumach it will carry on to the end of July the effect of the Laburnum and Scarlet Thorn. The hedges, as one would expect in a place with traditions of Elizabeth's reign, are very plentiful, and they are well cared for. There is a pretty path above the kitchen garden hemmed in on both sides by hedges, and here and there breaks of lawn. The beds here are filled with showy flowers, and the Rose beds looked pictures of good condition. Mr. Greenfield approves of no pruning, except the removing of dead shoots and an occasional thinning. The shoots are allowed to grow at will and are merely pegged down, attaining very often a length of 11 feet or more. That this is the best system to be adopted with Moss Roses can admit of no doubt. The chief feature on the

dance flowering when about a foot high, although it reaches a height of 3 feet or 4 feet. Brussels Sprouts planted at the same time as autumn Cabbages looked vigorous and healthy, and had every appearance of very early maturity.

THE GLASSHOUSES are particularly well stocked. In the stove is one of the finest *Stephanotis* plants in the kingdom. Other prominent plants are *Eurycles Cunninghamii*, *Croton Etna*, and the old *Thunbergia fragrans*. In the cooler houses *Fuchsias* trained under the glass produce masses of bloom. Old varieties, such as *Avalanche* and *Lord Beaconsfield*, are still the freest bloomers. *Primula obconica* is a pretty Primrose not generally known. The best houses are the ferneries. Under the shelves are planted among the Ferns various kinds of *Begonias*, and the back wall is covered with *Ficus nana* or *minima*, the effect of which is delightful. Why ferneries are not erected on a larger scale and decorated with greater taste is singular. However, there seems to be an inclination in this direction, and if only the exorbitant demand for supplies of cut flowers were to be limited they would soon become popular. The



Warwick Priory (garden front).

side are Bluebells, dancing like Daffodils in the breeze; wherever they are present the Grass is left uncut, and how pretty they look, bashfully keeping their gaze on Mother Earth. Daffodils, too, would be in keeping here under the canopy of trees. Strolling from this path across the lawn to the house, the prospect all round is tasteful and pleasing; in fact, anyone with a residence surrounded by about twenty-five acres could not do better than take this quaint old place as a model.

THE FLOWER GARDEN is of considerable size, and is illuminated early in the year by beds of *Violas*. These beds are arranged with a cross in the middle of one colour, an edging of a second colour, and the intervening space is filled up with a third. One especially took my fancy, containing bronze, purple cross, and lavender edging. The favourite varieties are *Holyrood*, *Cliveden Purple*, *compacta*, *Mrs. Grey*, *Duchess of Sutherland*, *Sportsman*, *Pilrig Park*, and *Queen of the Valley*. Between the flower and kitchen gardens intervene well-managed shrubberies. Notable among the trees are fine specimens of *Thujopsis borealis*, one of them a pendulous variety and extremely rare. So well does this tree do here

other side of the house is a prettily conceived dell, in which *Osmunda regalis* is growing strongly. A noticeable matter, as regards the undergrowth of the shrubberies, is the immense quantity of *Primula japonica*, which seeds itself, and promises to overrun the ground as freely as the common Primrose. It is a pleasure to go into the

KITCHEN GARDEN, so well are the herbaceous borders arranged. Few of these beautiful plants were in flower when I was there, but the foliage of many makes up for this deficiency in spring. The more common *Pyrethrums*, *Potentillas*, and *Spireas* are well represented. One of the outside borders is planted with *Columbines*, *Carnations*, and *Violas*. Although thus ornamental, the kitchen garden shows in every respect evidence of careful attention. To every novelty of sterling merit a trial is given. But in this respect so much change does variety of soil effect, that each cultivator must buy his own experience by tests carried on by himself. Why, however, it may be asked, are so many contented with the old kinds of *Rhubarb* when varieties like *Stott's Monarch* are so infinitely superior? *Gooseberries* are grown on espaliers and present a very fertile appearance. Among *Peas* I noticed *Bliss's Abun-*

illustration on p 468 represents the old banquet-hall and this the modern garden front.

C. A. M. CARMICHAEL.

Cape bulbs.—I shall be glad to exchange bulbs of *Antholyza paniculata* for other Cape bulbs, such as *Watsonia*, *Tritonia*, *Ixia*, *Sparaxis*. Those of your readers who have walked over the Cape Flats in September and noticed the immense variety of bulbous flowers in full bloom will not wonder that so many try to make collections of Cape bulbs. Have any of your readers noticed the hedges of a large white single Rose—I believe *Rosa rugosa*—near Claremont? The hedges of *Plumbago* and tall trees of *Bougainvillea* and *Camellia* are familiar objects to all visitors to the Cape. Perhaps it may be worth while to notice that the soil of the Cape Flats is almost entirely peat and pure white sea sand. Collectors of Cape bulbs should take a note of this. The Arums grow in the bottoms of wet ditches, and are commonly called *Pig Lilies*. I never saw *Freesias* growing wild at the Cape, but I know a spot near one of the diamond mines at Kimberley where there are 500 or more growing in hard red clay and sand; these have a good deal of yellow in their

blossoms. Need I add that the climate of Kimberley is entirely different from that of the Cape—a dry winter with constant frost, and with heavy rain in spring, *i.e.*, September; whereas the Cape has a wet winter. The *Convolvulus* seed I offered in your columns some months back turns out to be *Ipomœa coccinea*, and is comparatively worthless. My attempts to hybridise it were unsuccessful. During my holiday my *locum tenens* took it into his head to rearrange my greenhouse, and threw away the plant of *Ipomœa coccinea* and the seeds I had hybridised, which were nearly ripe.—C. O. MILES, *Barley, Royston, Herts.*

FLOWER GARDEN.

FLOWERS IN THE ISLE OF WIGHT.

IN THE GARDEN (p. 411) Mr. Smith, of Newry, draws a comparison between the climate of Ireland and that of the Isle of Wight, but he does not say enough in favour of the latter. At this time of the year, when a few flowers are in blossom here and there, it is natural for their admirers to rush into print and to chronicle the event. I can quite sympathise with their feelings, for I so often do it myself; but my object in taking up my pen now is to ask if any of your readers can tell me why flowers hold on so long and so well in the Isle of Wight in comparison with what they do in most other places. It is a veritable home for flowers in a sense to which Swanley can lay no claim at all. The lists in your paper of plants which are in blossom now make me thankful for the advantage I enjoy, but I am puzzled to account for it. I send you some of the beautiful blossoms of *Exogonium Purga*. I was at Bitton about a month ago, and its glory had departed and its service was done; but here this morning it is exquisite in the extreme, and its long wreaths of blossom seem perfectly indifferent to the cold east wind which one would have thought would cut them to pieces and make an end of the display. I am told by Mrs. Foster that a plant which I gave her never blossomed near Cambridge in a greenhouse at all; whereas my four or five plants have been smothered with blossom for some three or four months, and are so still. If I were a plant I should infinitely prefer the fostering care of the greenhouse at Cambridge to the cold winds of this island, but this is not the choice which many a plant would make. My beautiful Hop-leaved Vine has just passed its best, but innumerable clusters of sky-blue berries still cover an outhouse near to which it is placed. *Yucca Ellacombei* is a sight to see, and it would please the heart of the aged gardener in Devon if he could look on the red varnished buds of his namesake and its glorious spikes of bloom. Other *Yuccas* keep pace with it. They seem to like this time of year, and they are very grand indeed. *Habrothamnus fascicularis* is still very pretty in the open ground. *Schizostylis coccinea* is in great beauty all over my garden. It is our best November flower, but many others accompany it. *Rubus roseifolius* fl.-pl. is also very nice just now. A patch of *Linaria aureo-reticulata* is charming on the rockwork, and attracts every beholder. *Gentiana acaulis* is in full blossom, and I could add name to name if there were any occasion for doing so. And this is not all that can be said about gardening in the Isle of Wight. I frequently read of difficulties in your paper and explanations of difficulties about which I know nothing at all. The minds of some of your correspondents were exercised lately about the well-being and blossoming of *Montbretia Pottsi*. I have no doubt that Mr. Thompson is quite right in what he said about the matter, but still the fact remains that *Montbretia Pottsi* blossoms in my borders if it be crowded, and if it be torn to pieces alike. It seems perfectly indifferent to any process of that sort; so also I read to-day in your contemporary that *Iris cuprea* resents being matted, and will do nothing in a condition of that sort. That is so, no doubt, in other places, but I leave it alone here for years, except to cut off bits for my friends, and *Iris*

cuprea never fails to have blossom, so that I have come to the conclusion I can adopt such words as those of Mr. Smith with an emphasis on them, "Our climate we consider to be a favourable one for the full development of many plants," but why it should be so in such an exceptional degree is not yet clear to me. Is it because of the sun, or the sea, or the soil, or is it because of a combination of all these things? The sea must, I think, have something to do with it. At any rate, no gardener need take credit to himself for any success in the Isle of Wight; it seems to come of itself. H. EWBANK.

St. John's, Ryde.

AURICULAS LATE IN AUTUMN.

MY plants never before looked better at this season of the year than they do at the present time, and I have been troubled so far with but few autumn trusses. A great many of my plants were potted early, and they made such vigorous growth that I feared many would throw up flower-stems in September and October. I think it has been a good season for Auriculas if well looked after. Mine are always in a north house, for I have unfortunately no convenience for giving them a south aspect in winter and early spring. I wish I had, for then I could get them in flower earlier in the spring. I am debating within myself whether early potting is favourable to early blooming, and I do not at all think it is. It may induce autumn trusses, and it is held by some cultivators that plants that do this in autumn are certain to be late in flowering in spring. Some of my latest potted plants in 1883 were among the earliest to flower in the past spring. Perhaps late potting most nearly approximates to the natural conditions under which the Auricula grows in its native habitat. Our plants are top-dressed in spring; they then flower, and after flowering, aided by the top-dressing, they perfect their summer growth. While this is being done the plants should not be neglected; the surface soil should be stirred, dead foliage removed, and watering carefully looked after. If allowed to rest a bit, the growth is brought on to the middle of August. Then, it seems to me, is a good time to repot, shaking out all the old soil from the roots, trimming them, cutting away any unnecessary parts of the carrot or main stem, and then potting deeply in good, sweet, genuine soil. The plants appear to get to work at once; they generally root freely and strongly, and establish themselves before the winter comes on. It is sometimes convenient to pot early. I think it is a good plan then to re-pot into a small pot, and give another shift in August when the pots are full of roots. As a matter of course, Auriculas in small pots require careful looking after during hot, dry weather to see they do not want for moisture. Would this second shift encourage the production of autumn trusses? This is a point on which I should like the opinion of experienced cultivators.

There are some growers who, like myself, find it difficult to get hold of a good Auricula soil. They have to put up with what they can get, and it is apt to go sour. In such a case a second potting in August or early in September might be, and no doubt is, advantageous. I have experienced great difficulty in getting a good loam in which the plants may be said to flourish. Apparently good loams soon become stagnant and sour, however much one may desire to keep them open and free. Happy is that grower who can obtain a soft, silken, yellow loam about the touch of which there is something suggestive of suitability and fertility, and out of some 500 plants I have scarcely lost one this season. Such a loam I have been able to use in 1884.

For some reason I have been but little troubled with the woolly aphid this season, and I do not think I have seen a single little green caterpillar—one of those hurtful wretches that bore their way into the filbert heart of an Auricula, and if they are not detected, eat it out. I hope other growers

have been equally fortunate. Though my house faces the north, yet during June, July, and part of August a good deal of midday sunshine falls upon it, and it is very hot and dry. When the weather is of this character, I syringe freely overhead in the morning, and the plants appear to like it immensely. It keeps the leaves clean and fresh, and certainly checks the increase of green fly. The floor of the house is also kept thoroughly moistened. Prince of Greens and Colonel Taylor are doing grandly; Anna and Talisman are decidedly satisfactory; Lincoln Green, one of the late Mr. J. Read's seedlings, has much of the habit of Colonel Taylor, and I think is likely to make a useful sort. How I should like to get hold of some of the fine greens raised by the Rev. F. D. Horner. Are they never to be put into commerce? Among the grey edges I cannot succeed as yet with Victor, and I regret it all the more, for it is a fine flower. After it reaches a certain stage it appears to go back. All my good greys are full of promise. Among the white edges, Acme is in excellent form. Read's Cleopatra is an excellent grower, but for three years past I have not been able to get a good bloom from it. I once had it very good. What a grower Hetty Dean is among the selfs! It has a very distinct habit of growth, horizontal, the leaves very round, and of a leathery thickness. It has the very best of constitutions. Hitherto we have been led to associate weakness of constitution with yellow selfs. If this be true, Hetty Dean is a conspicuous exception. If it may be said to have a drawback, it is that it comes into bloom very early. It did so last year, and I was able to exhibit it a fortnight before the National Auricula Show, and when I had not another variety in flower. This precocity might have been an accident of the season. I have three very strong plants of it, and I am anticipating a fine head of bloom in April next. R. D.

CHRYSANTHEMUMS IN THE OPEN AIR.

IN the following remarks I am not going to refer to that useful class of Chrysanthemums now becoming known and appreciated for their value in the summer and autumn decoration of the flower garden; on the contrary, what I am going to write of are the numerous fine varieties commonly grown in pots for the embellishment of greenhouses and conservatories. It does not appear to occur to many to grow the best kinds of these in the open air to bloom in November, and I know of many who think that the magnificent flowering sorts which they see under glass are too tender for the open air, but that is incorrect; one kind of Chrysanthemum is just as hardy as another. For some weeks past and just now Fair Maid of Guernsey, James Salter, Queen of England, and many others of all sections have been blooming in one of our kitchen garden borders as beautiful and well as any under glass, and we have cut large quantities of flowers from them. As flower garden subjects generally are now almost out of flower and herbaceous borders are not very bright, the Chrysanthemums are most conspicuous and attractive. Many people say they never thought they would flower so well in the open air at this season, and they are going to try them more extensively another year, which is just what I want them to do, as I feel certain that all who do so will be satisfied with the result.

A grower not far from here has a very large collection in his kitchen garden borders this season, and is delighted with his success; his blooms of the finest sorts are just as large and numerous as any which he had from pot plants under glass. His plants are all from spring cuttings, and they have grown well. Indeed, considering the little attention which they have had, they are remarkably good. Our plants flowering just now are mostly old pot ones of last year; after we took the cuttings from them in spring they were planted out here and there in the borders, and plants of this kind are very useful, but we are so much impressed with their good qualities in the open at this season, that we intend propagating largely next spring for open-air culture. They will be planted in mixed rows and masses.

In my opinion we have no flower indoors or out to surpass the *Chrysanthemum* at this season, and those with no glasshouses, who see such grand displays of them at shows, must feel sorry they do not possess the means of growing them to such perfection; but let all who have a little front garden or a back one either, or a piece of ground anywhere, plant some of the best kinds in spring, and they will be delighted with the result. I often see rows of some puny flowering sort grown in the open air, but rarely any of the large incurved or Japanese sorts, and it is these which are capable of giving the greatest satisfaction. Even in gardens with plenty of glasshouses, I would recommend a good collection to be grown in the open air, as they supply large quantities of blooms for cutting, and this saves the pot plants. Newly rooted cuttings of good sorts can always be bought cheaply in spring, and all who may be induced to invest in them may rest assured that they will prove highly remunerative. J. MUIR.

Margam.

DAFFODIL NOTES.

THE LEEDSI VARIETIES.—At last we have before us (p. 426) some correct information as to the origin of the Leeds' seedling *Narcissi*. The wonder is that it has lain hidden so long in the volumes of an old botanical magazine. Mr. Burbidge stated at the Daffodil conference, according to the reference he gave us last week (GARDEN, April 5, p. 285): "The late Mr. Leeds, of Longford, who raised more new kinds than anyone else, gave us no information whatever, nor did the late John Horsefield." I think your readers will thank me for reviving the subject in these Daffodil notes, as we have now before us the record in both cases. Of the latter we have still a very incomplete record, but it is all that can be gleaned; but that of the Leeds is very complete and most instructive, and it further proves the correctness of the conjecture I made as to the influence of Dean Herbert, who wrote in 1843: "It is desirable to call the attention of the humblest cultivators—of every labourer, indeed, or operative who has a spot of garden or a ledge of window to the infinite variety of *Narcissi* that may be raised, and most easily in pots at his window, if not too much exposed to sun and wind, offering him a source of harmless and interesting amusement, and perhaps a little profit and celebrity." This was evidently one of his lay sermons, which he would preach as he went about in Yorkshire and Lancashire, and it is now becoming clear that it was through his influence that Leeds, Horsefield, and Backhouse achieved such successes.

In THE GARDEN (May 19, 1883, p. 451) will be found an article of mine on "The late Mr. Leeds' garden at Longford Bridge" which may be worth turning to at this time, when so much interest is centred in Mr. Leeds. The first and last paragraphs refer to the seedling *Crocus* Leedsi, of which Mr. Burbidge wrote last week. There were two seedlings retained by Mr. Leeds and propagated for stock—the purple and white-tipped variety, as figured in the "Magazine of Potany," and a rich cream white variety. Both have a sturdy dwarf habit of growth and are excellent varieties. I had the whole carefully collected and removed to Brockhurst three years ago, and there is now a large stock of them. A few bulbs have been given to Mr. Maw, Mr. Shortt, and other amateurs, but beyond this I do not believe that they have ever been distributed.

All the *Narcissi* from the seedling beds were also removed here, and they now amount to some 4000 bulbs. They have been carefully assorted over the last three years, and there are a great many excellent varieties amongst them well worth naming when the stock is large enough. These added to the 152 varieties already included in Mr. Barr's catalogue will make a pretty long list of Leedsi Daffodils.

Mr. Leeds's garden is now a thing of the past. The site has been cleared of every plant and laid out for building land. I often rejoice that it was my good fortune to hear of it before the plants were dis-

persed. For two years I regularly visited the garden and marked down for removal every bulb and plant worth having, and these were all transferred to my garden here. We have thus pleasant memorials of Thomas Leeds all over the place, and many of these are plants of great rarity. The article above referred to contains a brief notice of Mr. Leeds. I still hope that more may be forthcoming.

THE SEEDING OF DOUBLE DAFFODILS.—It will be remembered that I introduced this subject at the Daffodil conference, and afterwards reported that on June 24 we gathered a capsule containing nine ripe seeds from a double Daffodil which had been carefully marked and watched for the purpose. These seeds were sown in a pot at once, and there are now four of them showing Grass-like growths an inch above the soil. This, therefore, completes the proof that full double Daffodils may bear ripe seeds. As it will be some five years before the seedlings bloom, we must wait for the further information as to whether the flowers will be single or double. WM. BROCKBANK.

Brockhurst, Didsbury, Nov. 15.

NOTES ON HARDY PLANTS.

A FRAME FOR ODDS AND ENDS is one of the handiest appliances one can have where rare or little-known plants are being cultivated. Only hardy plants are meant, and whilst it is very convenient to pot up new comers as they arrive singly or in small batches, they may be so treated in a frame as not practically to be under abnormal conditions as regards their hardy nature. On the contrary, it is helpful to such things if we soften the hardness of their first winter by screening them with a glass cover against frost and what often proves equally trying—fogs and rain. To fill up the frame pretty well with sand in which, when plunged, the plants are brought near the glass, both provides for good drainage and sturdy growth, with the advantage of open-air treatment by removing the lights when the weather is at all favourable. Where plants of a miscellaneous kind have been coming to hand all through the summer, it would now be well to look them over thoroughly—take all out, in fact—turn the plunging material, examine each pot, and make the drainage good where it is at fault, remove from the surface all such pests as Liverwort and Spurry, and top-dress each plant with their respective composts, to which may be added with benefit a liberal dash of fine charcoal.

IRIS OLBIIENSIS is one of the dwarfest kinds, but its flowers are very large and superbly coloured—violet-purple. No one who has flowered it would like to be without it, and those who have not yet made its acquaintance have a treat in store if they will avail themselves of it. I have often heard of its "going off," but I venture to say that if one condition is rigidly carried out in setting it, it may be grown with increased yearly vigour. Plant it in rubble, and if in a pot, drain to half its depth with small clinkers, but give a large pot to allow the roots to creep on the surface for two or three years, during which time a young plant is better left alone. Whether planted in pot or border, the compost should be poor and of a dry nature; the sweepings from a gravel walk, with just a little peat, will not be far wrong, but a sprinkling of charcoal dust will improve it. It is, however, one thing to healthily grow this *Iris*, but quite another to flower it well. Doubtless an important factor in accomplishing the latter is climatic conditions; still, much can be done that is not usually done for the class to which this *Iris* belongs. *I. stylosa*, *I. verna*, *I. susiana*, *I. iberica*, and a few others all need sunny positions, loose rubbly soil, and their crowns well exposed to air and sunshine. Some of these I never did flower until they were planted in a raised bed made of walk sweepings, to which a little lime was added. A handy and safe way of increasing this class of *Iris* where plants are of good size is to operate now when the new roots and crowns are pushing. Do not disturb the roots more than is needed to bare the tuberous part or

rhizome; cut this through in such a way that each piece will have one crown or more and also some roots; open the cut and drop in powdered wood charcoal, which prevents decay. The advantages of this plan are that flowering is little if at all interrupted, seasonable root action goes forward, and useful back breaks are obtained from the oldest parts of the roots. After flowering the roots may be taken up, and each division will be ready for separate duty, and by that time will very likely show several fresh eyes.

AUTUMN-FLOWERING CROCUSES IN POTS.—A few of the less common kinds potted for handiness have, after two years' growth, not only flowered well, but suggested a mode of culture attending which there are several important advantages. These naked flowers when grown in beds have no protection but such as they afford each other in masses against high winds which often prevail at their flowering period. They are known to be fairly durable as regards blossom, but, nevertheless, it is no uncommon thing to see them broken in the tube the first day the flowers open. This can be prevented by potting and keeping them in cold frames, where even greater purity can be secured than when out of doors. Amongst the species there is sometimes some uncertainty as to when the bulbs are in a fit state for transplanting, and those kinds, having stoloniferous corms, are even more critical to deal with in this respect than the others, besides showing a straggling habit when in the open, but when in pots they can be examined without any trouble. I do not mean to say, however, that these lovely autumn garden gems should be generally transferred to close quarters; but as many of us have yet much to learn about them, it may be worth a little extra care to grow them under such conditions as they can be best observed.

THE NARCISSI (AJAX SECTION) UMBERTO I. AND REGINA MARGHERITA have lately been referred to twice, and Mr. Hartland, I understand, says (p. 396) that they are not obtainable. Doubtless that is so now, but as early as June I chanced to get a few bulbs, and set them at once. I shall be surprised if they come up to the description given of them, for they seem too small to produce very large flowers. The bulbs were about the size of those of *Scilla sibirica*, quite sound and plump, not mere offsets. I may add that now the Grass is 6 inches or 9 inches long, but nothing like the broad foliage of our bicolors. The flowers are appearing, too, and at their present rate of growth should open in another fortnight; hitherto they have been in the open air, but should frosty weather come on, we will take them indoors to try and bring them forward. For two months we tried to keep them back first in darkness, then by putting the pots on their sides, but clearly they are much earlier than ours, after making allowance for their unacclimatised condition, and this they are said to be, so we must wait and see if they do or do not surpass our English bicolor varieties.

AMPELOPSIS JAPONICA.—A very dwarf shrub sent to me two years ago under this name is one of the brightest objects in the garden just at present. The leaf tints are a golden ground with scarlet stains starting from the edges of the foliage. The habit is dwarf and tree-like; in fact quite rigid. The effect is all the more to be admired from the whole set of foliage adhering and the tint period thus prolonged—just the opposite of the hardy *Azaleas*, whose tints soon turn and leaves fall, often showing the wood but thinly furnished with high coloured leaves.

GEUM MONTANUM deserves more attention as an autumn bloomer. In summer the somewhat Buttercup-like flowers, though really far more beautiful, are perhaps too tame to attract much notice when the flower season is in full swing, but in November when yellow, and, indeed, any kind of open garden flowers are scarce, it is very noticeable. Not only do the flowers last a long time, but they are finer where the plants have been cultivated and the seed removed. What I mean by cultivated is this: every two or three years there should be division and deeper planting. To

this section of the Geums, whose root-stocks get high and dry, this operation is more needful than for the ordinary run of alpine and herbaceous plants. It may be interesting to note their habit, but only by generous treatment can they be had of a lively green, and often flowering in mid-winter. Practically, as well as botanically, the flowers, nearly 2 inches across, are single yellow Roses.

VERONICA CORYMBOSA.—If one wanted a truly beautiful and delicate blue flower from the open borders or rockwork without that worn-outness common to most at this season, hardly another so suitable as this could be found, and it may be added that it is a kind adapted for cutting. *Parochetus communis* is pretty and Violets are indispensable, but they do not cut and work up like the delicate spikes of this five months' flowering Speedwell, which after all is not more than 8 inches high. I consider it one of the best rock plants or for cut flowers. *V. satoreifolia* and *V. prostrata* have also their deep green mats of foliage brightened with slender fresh, but lax spikes of bloom. *Satureifolia* reminds one strongly of *Linaria linifolia*, not in foliage, but flowers.

PHYSALIS ALKEKENGI, or Winter Cherry, is one of the ugliest as well as most tiresome of herbaceous plants for the greater part of the year. It is well known for four things—coarse foliage and habit, insignificant flowers, rapid-running roots, and a difficult name; but "everything has its day," and the Winter Cherry is now on duty. The large orange-red inflated pods hang pleasingly on the bare stems, and they sometimes remain until Christmas. These may be cut for indoor use; with Iris leaves, Heather, or ripe Bracken they form a sombre, but seasonable, decoration.

APIOS TUBEROSA, or what the Americans call Ground Nut, is known for its slender growth and climbing habit, also sweet autumnal flowers, but until a few days ago its Nuts were an almost hidden secret to me. There were the long trails and flowers, but I could never find but a few small Nuts, until we had occasion to take up some old and deeply rooted White Pea, when literally we fathomed the secret, for at a depth of 18 inches or 24 inches the big tubers were found in strings, in the style of saveloys. It would appear that the small tubers which we had formerly found belonged to the near end of the string-like roots, and that until the off ends get well down the bigger Nuts are not produced. For the successful planting of this elegant and uncommon climber the tubers cannot be returned to the ground too quickly. Light and air appear to make them woody, when they may not vegetate at all the first year. If the strings are cut up and the tubers set singly, like Potatoes, whilst in a succulent condition, they grow rampantly.

LATHYRUS LATIFOLIUS ALBUS, though so much esteemed and as hardy as can be, is really a scarce plant. Doubtless there are reasons for this. As a variety only it does not always come true from seed, yet that has been the handiest way of getting good plants, provided they were carefully looked after until they were proved; as a matter of fact, the pink or typical form often gets about for it, and many do not care to begin another two years' trial; to many the common kind is not desirable in the least. To divide the roots, no matter how strong or large, in the usual way is out of the question. The somewhat long, tuberous roots set from a sort of mid-stem, at the apex only of which are found the vital parts. A four-year-old or five-year-old root resembles a good bunch of Banana fruit, only the tubers are longer and the mid-stem shorter. I am glad to say that, from trials made, I have been able to get not only quicker, but (what is of main importance) more certain results by the following plan: Take a strong root from light land if possible, where the tubers are sure to be better developed. There may be ten or there may be thirty tubers from 6 inches to 12 inches long, and half an inch or more thick in the middle. Imagine the Banana fruit; begin at the top and take off the tubers one by one, but instead of stripping them from the mid-stem, cut a portion of it to every tuber. I fancy this to be of

importance, as securing to each an eye at the most vital part of the tuber; so the root will all be cut into parts each with a heel or knob, which only need to be planted in light, but rich soil. Some may flower the first year, but as a rule they will not do so until the second. To the tops or sprouted parts I leave two or three of the uppermost tubers; these carry it on in vigorous flowering, especially if the ground is well tilled for it. J. WOOD.

Woodville, Kirkstall.

OPEN-AIR FLOWERS AT WYNNSTAY.

At this date (November 23) I have before me a large basket of outdoor flowers which might be worthy of record in your columns as showing the capriciousness of our climate:—

Verbenas, various	Borage
Saponaria calabrica	Strawberry
Matthiola sicula	Beck's Gem Bean in full flower
Polyanthus, red and yellow	Pyrethrum aureum
Primroses, red and yellow	Roses in variety
Agrostemma coronaria (atro-sanguinea)	Daisies, double
Chrysanthemum carinatum	Tobacco, various
Heliotrope	Castor-oil Plant
Mignonette, variety s	Pansies
Pot Marigold	Stachys lanata
Marigold Meteor	Spiraea callosa
French Marigold	Lobelia speciosa
African Marigold	Lobelia cardinalis
Poppies of sorts	Dahlias, double and single
Gaillardia picta	Aubrietia Thompsoni
Love-in-a-mist	Aubrietia deltoidea
Centranthus macrophyllus	Jasmine nudiflorum
Centranthus coccineus	Origanum Tournetforti
Centranthus c. albus	Androsace sarmentosa
Cornflower, various colours	Carnations, various
Wallflowers	Anemone japonica
Helichrysums, various	Senecio, annual, various
Lavender	Auriculas, various
Scandolous, various	Calceolarias, various
Campanula murdis	Geraniums, various
Senecio pulch r	Ageratum
Phlox	Ice Plant
Pentstemons, various	Christmas Roses
Erigeron marianthum	Violets, various
Aster multiflorus and Nov. Belgii	Erica carnea
Foxgloves	Geranium pratense
Mallow, curled variety	Laurustinus
Antirrhinum	Vittadenia triloba
	Lobelia gracilis

The chaffinch, sparrows, and robins disport themselves merrily, catching the numerous winged insects; still, there is a crisp, dry, cool atmosphere, that keeps our bud world fairly dormant. The leaf fall has been healthy and regular; and, in the words the other day of a worthy Shropshire squire, "this has been a season worth living for." In addition to the above, we have cut at Llangedwyn:—

Gladiolus	Doronicum plantaginifolium excelsum
Schizostylis coccinea	Morina longifolia
Echinops Ritro	Alyssum (variegated)
Clematis Jackmanni	Arnebia echioides
Anthemis tinctoria	Coreopsis grandiflora
Eryngium bromeliacifolium	Harpatium rigidum
Helianthus multiflorus	Linaria cymbalaria
Evening Primrose	Sedums (various)
Clematis coccinea	Verbena venosa
Achillea filipendulina	

Flora has fairly bloomed herself to sleep in most instances, but in some, as shown, she is determined not to take her annual nap. Some fine dishes of Mushrooms have been gathered here during the past few days—a fine dish this morning. Some specimens of a sub-variety of the true Mushroom were brought me yesterday, 6 inches across, with gills temptingly pink and fresh. We are still gathering Red Currants from Llangedwyn gardens in excellent condition. We sent in to-day our last (?) dish of Raspberries and alpine Strawberries. During the past few days we have machined the lawns, and still the Grass grows. The buds of the Horse Chestnut trees are covered with their spring viscous fluid; Daffodil growths are some inches out of the ground; moths and bats are frequent; thrushes have been singing till within the last few days; Jenny wren sings gushingly; worms swarm on the lawn.

P. MIDDLETON.

Hardy plants in bloom in Kent.—The following flowers I cut out-of-doors on Wednesday, the 12th inst., and exhibited them at the Tunbridge Wells Chrysanthemum show on Thursday. As will be seen, the list is a long one, con-

sisting of over eighty varieties. Many of the flowers were very plentiful, Dahlias especially. Since then we have, however, had several degrees of frost, and all the tender plants are cut down. The following is the list alluded to, viz.:—

Anchusa sempervirens	Matricaria fl.-pl.
Agrostemma coronaria	Mignonette
Alyssum variegatum	Marigold, African
Anemone japonica alba	French
Aponogon distachyon	Menziesia polifolia
Aster horizontalis	alba
Aubrietia purpurea	Malope grandiflora
Antirrhinum majus	Osmorhiza ilicifolia
Ageratum	Papaver cambricum
Alonzoa linifolia	Pasiflora corulea
Amimobium alatum	Pernettya macronata
Calceolaria (yellow)	Petunias
Carnation (seedlings)	Phlox Drummondii
Clematis Vitalba	Primroses, common and coloured
Centauria Cyanus	Polyanthus
Chrysanthemums (various) annual	Pyrethrum, double
Cuphea platycentra	Polygonum vacciniifolium
Cactus Dahlia	Roses, several varieties
Dahlias, single and double	Rudbeckia Newmanni
Dianthus sinensis	Rhododendrons, two vars.
Echeveria metallica	Saponaria calabrica
Erica carnea	Scabiosa, double
vagans	Stocks, East Lothian
Escallonia rubra	Spiraea Ulmaria
Eccremocarpus scaber	japonica
Fuchsia Riccartoni	Tritoma Uvaria
various	Tradescantia virginica
Gentiana acaulis	Tropaeolum, various
Geranium sanguineum	Tagetes signata pumila
red and white Vesuvius	Veronica venosa
Gaillardia grandiflora	Cannell's crimson
Gladiolus (seedlings)	Viburnum Tinus
Helianthemum vulgare	Violets, Russian
Hebe tropicum	Vinca major
Honey-suckle	Verbascum Thapsus
Hydrangea	Sweet Williams
Helichrysum montrosum	Sweet Peas
Jasminum nudicaule	Nemophila discoidalis
Lithospermum prostratum	Yucca gloriosa
Lobelia cardinalis	

—W. HOLAH, Redleaf, Penhurst.

Black Briony in the garden.—I do not think it is neglect of such a lovely plant as the Briony that makes it scarce in the garden, but the length of time young plants require before they produce the fine shoots which one sees in the hedges. Though I have several young plants, which increase perceptibly every year, all attempts to move large pieces have ended in the roots rotting, which is, I believe, because the tubers have so very little root attached to them. Perhaps others may have had similar or different experience.—J. R. D., Stanford Hill.

Ficus repens on a wall in the open air.—In the very interesting gardens at King's Weston, near Bristol, we were charmed to see this plant, usually grown under glass, covering walls in a very pretty way and in perfect health. It was a low wall in front of a glasshouse, and was densely covered with foliage, swelling in many pretty little waves and hillocks, and yet never getting loose or patchy. We have never seen quite so perfect or delicate a carpet for a wall. We remember also to have seen this plant in perfect health on a wall at Col. Tighe's place in Kilkenny, but there the leaves were larger and quite of a bronzy colour.

The chimney Campanula as a wall plant.—This fine border plant we were surprised to see growing freely on walls at King's Weston, near Bristol, lately. One growing on a low wall surrounding a tank was 5 feet high, and must have been a pretty object when in flower. Among the many plants we have recommended for growing on walls we had not previously considered this. It clearly is as happy as the common Ivy Toad Flax in such a position. Most wall plants are dwarf, and fine spikes of this would be very desirable among them, especially on ruins and grey old walls. Its merits as a hardy border plant and as a pot plant are well known.

The white Sweet Pea.—I have been much pleased lately at the effect of certain groups of this plant, the white variety of the common Sweet Pea, but selected and grown by itself. It is very graceful and pretty in autumn. The practice of keeping the various colours of the Sweet Pea distinct is very desirable. Practically, each has almost the value of a distinct plant. Patches, or

lines, or groups of such need not prevent us enjoying the usual mixture. I hope most growers are aware of the importance of autumn sowing in the case of the Sweet Pea. Some of the finest I have seen are from autumn-sown seed—I mean early autumn. Even if harm comes to the plant during winter, it need not prevent the usual sowing in spring. It should be an invariable practice to sow in autumn as well as in spring.—Z.

PLANTS IN BLOOM AT CULVERWELL, BATH.

THE following, owing to the mildness of the season, were in bloom on November 15. I have not attempted any classification, but merely jotted them down as they came under observation in my stroll round the garden:—

Agathaea colestis	Anemone coronaria
Lolichia pumila	japonica rosea
Chrysanthemums frutescens	j. alba
Leucanthemum	Dahlias, single
Corn Marigold, yellow	Berberis Darwini
anatal	stenophylla
indicum, double and	Jamesoni
single	Periwinkle major, blue
Eurothera Lamarckiana	minor, white
taraxacifolia	minor, blue
macrocarpa	Convulvulus mauritanicus
Rose Camion	major
Pentstemons, various	Phlox, tall
Hypericum patulum	Drummondii
calycinum	Strawberries, garden
Hydrangeas	alpine
Arbutus	Violets, Russian and Czar
Polyanthus, various	Sedum, two varieties
Primroses, various single	Cyclamen hederifolium
double lilac	pyrenaicum
Daisies	Honeysuckle, Dutch
Michaelmas Daisies, three	evergreen
varieties	scarlet trumpet
Sweet Williams	Stock, white perpetual
Geranium lancastriense, pink	Ten-week
blue	Christmas Roses
Alkanet, native	Calceolaria, three varieties
italicum	Antirrhinums
Omphalodes verna	Ageratum, two varieties
Campanula pyramidalis	Salvia splendens
Calycanthema	Pansies in variety
Myosotis palustris	Vil-as in variety
Roses, many varieties	Linum g. anditiflorum
Pelargoniums, scarlet and	Ceropegia tinctoria
others	Atkinsoni
Clematis Mad. Cholmondeley	Godetia Brilliant
Symesiana	E-schscholtzia Mandarin
Flammula	Limnanthes Douglasi
Nasturtiums, tall	Everlastings
Tom Thumb	Candytuft, white
Tropeolum, single	Iberis Tenoreana
double	Poppy Carnation
Marigolds, French	Borage
African	Sweet Peas
Tagetes	Lavendula spicata
Calendula officinalis	Alyssum, white
Fuchsias, various	Aubrietia, purple
Wallflower Harbinger	Phygelius capensis
Carnation Grenadin	Oxalis purpurea
Ceanothus Gloire de Ver-	Heaths, two varieties
sailles	Spiraea, white, shrub
Mignonne	Escallonia macrantha
Abelia rupestris	Ingrami
Zauschneria californica	Pyrethrum, double white
Veronica spicata	Furze, double
glauca	Pyrus japonica
Andersoni	Nemophila insignis
salicifolia, white	Fumitory, yellow
Laurustinus	Osmanthus ilicifolius
Jasminum nudiflorum	Tricyrtis hirta

J. MALLETT.

Billbergia macrocalyx.—This is one of the best of the genus to which it belongs. It has long dark green curving leaves, with folding bases so as to form a tall vasiform plant, out of the middle of which the erect spike of brilliant bracts and flowers pushes up to a height of 2 feet or even more. The flower-stalk is covered with a pale brown meal-like coating, and on its upper portion bears a rather compact cluster of long green and blue flowers, the blue being along the margins of the curving petals. In this, as in all the Billbergias, the main attraction resides in the large boat-shaped, brilliant scarlet bracts, of which there are about a dozen arranged on the spike just below the cluster of flowers. Bracts are often attractive characters in the plants of our gardens, the Poinsettias, Euphorbias, Dalechampsias, and the new and beautiful introduction recently shown by Messrs. Veitch under the name of *Amasonia punicea* being amongst the most conspicuous. Beautiful colours are always attractive whether seen in flowers, in bracts, or in

foliage, and that the colour of this *Billbergia* is most brilliant we were enabled to see at Kew a few days ago where several plants of it were in flower, and also in the garden of Sir George Macleay, where this and numerous other Bromeliads are cultivated with the care and attention which they deserve.—B.

NOTES ON HELLEBORES.

H. NIGER ALTI-FOLIUS is unusually fine this year, and is now plentifully in flower. The mild autumn has favoured its blooming, so that it is less pink-shaded than usual. I never saw the blossoms so purely beautiful as they now are in sheltered situations. We have a great many plants of this Hellebore collected in all parts of the country, and many of them kindly contributed, during the last two years, when it was known I was studying the varieties of *H. niger*. The plants are now well established and are showing in their true forms, and it is most interesting to mark that they are almost precisely alike, although the plants came from the north and south of Scotland, from London, Cornwall, Gloucester, Devon, Yorkshire, Cheshire, Cambridge, and Essex. They all possess the purple-mottled stalks, sturdy foliage held well aloft, white sepals often delicately tinted with pink, and the most distinctive coronet of pink crowning the pistils. They all flower together, the earliest of the Hellebores, and slightly before the ordinary *H. niger*. This proves conclusively to my mind that *H. n. altifolius* is a distinct variety, and it is now well known that it comes to us from Carniola and Southern Austria. I have had several young plants sent from its native habitat, but they have not bloomed yet.

One of the Heinemanni varieties is also well in flower here, having four scapes bearing flowers, and many more showing. It is called *Albin Otto*, and has white sepals, green tinged and spotted with purple, but more sparsely than in the well-known *Commerzienrath Benary*. The parentage of this pretty Hellebore is probably well known, but if not, I think its early blooming is some evidence that it may be a cross between *H. niger* and *guttatus*. Its proper time of blooming would surely be with the Lenten Roses, but here we have it with the autumnal ones.

H. NIGER ANGUSTIFOLIUS.—Our Cheshire and Lancashire "true Christmas Rose" shows its buds now plentifully, but no flowers, and there are not likely to be many for a month yet. The leafage is much poorer this year than usual, owing to the very dry season. That which favours the development of *H. altifolius* does not equally help this variety, which is a moisture-loving plant, almost preferring a damp, peaty situation. Except where grown under trees, it is this year very deficient in leaf, but its crowds of buds show that in flowers it will be even more profuse than usual. Plants obtained now will bear removal well if a boss of soil is sent with them, and will flower by Christmas. All the leading florists have acquired a stock of them, or at any rate Barr, Collins and Gabriel, Backhouse, and Clibran can supply the true variety. It will be found that these Hellebores do not show well the year after removal or replanting. It is the same with the Irish variety—"St. Brigid's"; the plants depend upon the fibrous rootlets, which are spread widely out from the woody main roots. When the plant is taken from the ground these are rudely torn away, and for the next year the plant has to use up its strength for flowers and leaves without the usual amount of nourishment which the fibrous roots would have supplied.

After flowering, the plant has to begin afresh by throwing out its fibres into the new soil, and this has to be done before it can produce a flourishing crop of leaves and flowers as before. In this way a year is lost. I give these details because many have written to me on the subject, including professional gardeners, and this is my explanation based upon experience. It is the custom here to break up a large plant that has been forced, and to plant out the divisions in specially prepared soil,

richly manured, and to grow on until the third year. If properly managed these will furnish large plants ready for forcing, and if done every year there will always be a succession available.

I have seen it mentioned lately that you should force a Hellebore one year, and then plant it out for a year's rest and force again. But this will not answer. The plants will dwindle away under such treatment. It would be better to keep them in pots and manure and top-dress annually. There is, however, very little to be gained by forcing. If the plants are planted in suitable soil and in a quiet sheltered situation where cold winds are kept away, and if they are covered by cloches or with sheets of glass at blooming time, the flowers will come very nearly as early and will be quite as beautiful. They will also retain their whiteness longer and not so readily turn green.

Brockhurst, Didsbury. WM. BROCKBANK.

Planting Daffodils.—The following extracts from a letter from Mr. Vallance, dated November 16, may be of interest: "The Narcissi in the Scilly Islands are planted in beds about 4 feet wide with 15-inch alleys between them. First the ground is dug, and manure is well mixed with the soil as the digging proceeds; then it is nicely levelled. Frames are made just the width of the beds, with cross-bars (like a sash) at distances of 9 inches or 10 inches; these bars are bevelled off at the bottom. When placed on the beds and firmly pressed down each bar impresses a line. The bulbs are then placed in a line on the marks left by the frame on the soil, the space between each pair being about the size of a bulb, so as to allow for increase of size and stock. They are then pressed down to the level of the ground and about an inch of soil is thrown over them from the alleys. Another sprinkling is added in about a fortnight's time to cover the first lot of seedling weeds; as soon as these reappear the beds have a good top-dressing of fresh sea-weed from the beach. It will be seen that the covering of soil is only about an inch deep. The top-dressing of sea-weed answers a two-fold purpose: it keeps down weeds and maintains the soil in a moist, soft state, and besides it acts as a very acceptable manure to the Narcissi. We have tried deep planting, but we find by so doing that the flowers are later than they otherwise would be; the plants, too, are not so healthy and the increase not so large as under shallow planting." In another part of his letter Mr. Vallance says, "We are now cutting a nice lot of Paper-whites, and I should like you to see the Narcissus fields just now; they look so neat and well cared for, and the bulbs are just coming up through the brown sea-weed. We are cutting Arum flowers in the open field also." I wish I could persuade some of your readers to pay the Scilly Islands a visit. Besides the attractions of the bulb fields they would find plenty to interest them.—C. A. M. CARMICHAEL.

SHORT NOTES.—FLOWER.

The Crown Daisy.—The plant figured last week was raised from seeds gathered in the south of Europe by Mr. Kingsmill, and may therefore be supposed to represent the native type. It is a free and handsome annual.

Senecio pulcher.—From remarks that have been made it does not seem to be generally known that this plant is not hardy. It was killed in the winter of 1879 in the north of Ireland.—CHARLES E. MACILL, *Dalglish, Monkstown, Dublin.*

Sweet-scented Rudbeckias.—Your correspondent (p. 394) mentions *Rudbeckia intermedia* as the most fragrant. A kind which I received from Worcester under the name of *R. submontana* now, in certain conditions of the atmosphere, diffuses its Anthoxanthum-like odour far and wide, not is it by any means fugitive; pieces of the plant laid by last year are still sweet.—J. M., *Charmouth.*

Shallow v. deep-planted bulbs.—If "J. S. W." will read my remarks on this subject carefully and then criticise them fairly, I will reply, but I have not the least intention of following him into the misty region in which he has now taken refuge. If he cares to undertake a journey to Newry next spring I will undertake to show him in a garden with both a habitation and a name Daffodils and other eye-openers—facts in plenty which would most likely just as much surprise as instruct him.—T. SMITH, *Newry.*

GARDEN OF THE VILLA TASCA, PALERMO.

THE illustration in THE GARDEN (Nov. 15) of this villa reminded me of a visit I paid to it in the April of this year. It lies a little off the high road. Leaving Palermo by the Porta Nuova, you reach first the Cuba, a Saracenic palace built by the Norman King, William II., 1182. (It is singular that the princes of this line copied exactly the architectural style which prevailed during the period of the Arabian occupation of Sicily.) The edifice formerly stood in splendid and extensive gardens, whose glories have been described by various writers. Among others, Boccaccio mentions them in one of the stories of the "Decameron." Further on to the right you enter the pleasure grounds of the Cavaliere di Napoli, where is found a small vaulted pavilion called La Cubola, which Hare says is "the most perfect Saracenic remnant in Sicily." I have a drawing of it now before me. It is built of a reddish sort of stone, which time has mellowed. In the centre is a fountain now dry. It stands in an Orange grove, while beyond are seen the purple hills which surround the Vega, or plain of Palermo. These hills are crowned to their summits with verdure. That white road, winding through the groves of Olives and bordered with Aloes and prickly Pears, leads to the majestic cathedral of Monreale, built, together with the Benedictine monastery adjoining, by a Norman king, in obedience to a vision. The whole plain, called the Conca d'Oro, is one vast garden. As you look down upon it your eye rests on the deep green of the Orange and Lemon trees and the half-hidden gold of their fruit; these contrast with the pale shadowy branches of the Olive. The excellent system of irrigation introduced into the island by the Saracenic conquerors of Sicily and the natural richness of the soil alike contribute to the amazing fertility of this "earthly Paradise." Of the Tasca garden there does not remain much to be said. You approach it by the high road before mentioned, and entering the lodge gates, you traverse for some distance a shady lane bordered by hedges of Roses, which were in full bloom in spring. The first view of the villa is imposing; the plate gives a very good idea of it. The luxuriance of the semi-tropical vegetation, particularly the Palms, the Pampas, and the New Zealand Flax, seems to produce an oriental effect. Formal gardening there was little or none. A few beds of Cinerarias and Ranunculus in full flower were dotted here and there, but they had had evidently little care bestowed on their cultivation; they grew as they liked. The Eucalypti and other fine trees form the glory of the place. By a winding path, planted so thickly with over-arching shrubs that the view is hidden, you come suddenly upon a sheet of water where a number of aquatic plants flourish. Here and there is a miniature cavern full of Ferns; a flight of steps leads up to a Grecian temple, well provided with seats, from which there is a lovely and extensive view. I cannot, however, say much in praise of this arrangement. The garden is not very large, and it seemed almost a pity to cut it up into what after all had rather a tea-garden effect. The stream would have been very well if the shallow lake had not been attempted. I should have preferred broad stretches of verdure; smooth turf (as known in England) is impossible; but low-growing Mosses are a fair substitute, as we see in the Flora, a public pleasure ground within the walls of Palermo, which has already been described in these pages. But the evening approaches; the bells from the countless churches of the city are ringing the "Angelus;" and the faint perfume of the Orange and Lemon flowers, together with that of the Rose and the white Daphne, are wafted to us as we drive along the dusty road back to the quaint little hotel. Life in Palermo is delightful. Who could be dull under so fair a sky? Everything is new and strange. Happy those who can escape for a while from the care and turmoil of a busy life to "fresh woods and pastures new."

M. N.

MESSRS. NUTTING & SONS have removed from Barbican, owing to the expiration of their lease, to 106, Southwark Street.

NOTES FROM PORT ELIOT.

THIS, the residence of the Earl of St. Germans, is built upon the site of the Augustine priory, which formerly stood adjacent to the fine old Norman church that remains to this day. St. Germans, like Sherborne, was formerly a bishopric. Port Eliot is a battlemented house in a hollow, with close-shaven lawns all round its Magnolia-bound walls. On the north and east sides there is a broad valley gradually merging into a fringe of foliage. On the garden side the lawn slopes abruptly to some high Beech trees. This Beech grove is pierced by many walks, and by the sides of nearly all of them is a thick undergrowth of Laurels, Yews, and Rhododendrons. The latter are planted in prepared soil in which no peat has been used—only leaves and soil. Every now and then large open spaces are cut for them. The Lynher—here a tidal stream, and at low water a river of mud, in which it is a puzzle to find the watercourse—meanders through the park. Walks wind by its side, and very tasteful planting is observable in all directions. The Conifers that do best are *Picea cephalonica*, *Pinus insignis*, one of which has a girth of 11 feet, *Thuja Lobbi*, and *Cupressus macrocarpa* and *Lambertiana*.

The chief deciduous trees are Turkey Oaks, including the variegated varieties, and Spanish Chestnuts. Impressive also was the effective use that is made of the deciduous *Taxodium*. Whether in the spring or autumn, this tree is a thing of beauty, and is capable of giving as much change of tone as any tree in cultivation. A delightful spot near the riverside is the Horse-shoe Glade. It is a high precipitous bank of rock and soil in the form of a horse-shoe, mantled from base to summit with foliage. At the top, standing out against the sky, are some tall Scotch Fir trees. The grounds are very extensive, and include a great length of shrubbery walks, a lesson to be learnt from the latter being the beauty and adaptability for such positions of *Cotoneaster frigida*. Its leaves are long and shaped like a spear-head, and in autumn it is loaded with bright vermilion clusters of berries. It attains a considerable height, and affords a lively and attractive object for the background.

The kitchen garden is a pleasant old-fashioned place in the highest state of cultivation. A chief feature, both in this and previous years, is the successful culture of Peaches on the open wall without copings or any covering except that of a net in early spring. This, during the blooming season, is let down from the top of the wall and fastened to pegs placed at a distance of 2 feet 9 inches from the base of the wall. The climate is not very favourable in this part of Cornwall, and frosts are far more severe than at Mount Edgcombe, about eight miles south. Autumn-sown Cauliflowers were being cut from plants a year old, and very large and white they were. The plant houses are filled for the most part with old favourites, amongst them being *Billbergias*, *Meyenia erecta*, *Hibiscus Cooperi*, and *Duranta Baumgardii*, the foliage of which was copiously blotched with blue. Alongside the walks most suitable for promenades are gay herbaceous borders, closed in the rear with lines of Sweet Peas. Flowers of every hue were there, and most of them with English names.

C. A. M. C.

The dry season and the water supply.

—The condition of things hereabouts at present is abnormal as regards the water supply, and it is safe to predict that, unless the winter rains are ample, next season will bring a state of matters fearful to contemplate. It is now close upon December, and the drought is as severe, or even worse, than it has ever been known at this season. In the villages around water is being carted from long distances. Manchester, Bradford, Rotherham, and other towns are on the verge of a water famine. The springs are quite dry everywhere, and some here, which have never been known to fail, at the present moment have not a drop in them. In planting trees and shrubs the soil is found to be dust dry several feet deep, and

we are compelled to water newly-planted forest trees of the Pine class as copiously as in summer weather. No one here, even the oldest inhabitant, remembers anything like it. 1868 was very dry, but the rains in October restored the supply, whereas this year we have not had much more than 2 inches or 3 inches since August. The barometer is high and steady, and has been so for a long while.—J. S. W.

PREPARING FOR WINTER.

THE wood of Peach and Nectarine trees on open walls is in most cases so well ripened this year, that the young shoots may be unnailed and set free from the wall without any risk of frost injuring them, while the ripening of those not so far advanced will be accelerated. In all but in the most exposed gardens I hold with the practice of unnailling them. It hardens up the wood and helps to clean the trees from insect pests. All old shreds and nails should be removed and the surface of the wall exposed to the weather. Thus many insects that would have been benefited by the protection of the branches will be fully exposed. The surface of old walls that have become uneven through age should be fresh pointed where necessary, and, if appearances are not considered, the wall should first be washed with hot lime. Now that the leaves are off Fig trees their branches should be unnailed and tied into bundles and wrapped in straw or Fern.

Tea-scented Roses in beds or borders should have their stems earthed up with 6 inches of soil; then if the tops are injured, the plants will renew themselves from underground. To preserve the tops, there is no better plan than securely fixing a wisp of hay or Fern amongst them. Those on exposed walls should be treated as recommended for Fig trees, but in the case of Roses it is decidedly better not to protect until frost is likely to be severe; considerable harm may be done by giving protection when not wanted, as in mild weather it encourages them to grow. In gardens where Myrtles, Magnolias, and similar other rather tender plants require protection it should be in readiness when required. I have found that a covering of frigidomo has been quite sufficient for Myrtles. Cannas in the open ground should have a cone of cinder ashes put over their roots.

In the frame ground we have already on hand several loads of long litter to use in case of an emergency. We find it useful to shake lightly over such subjects as young Lettuces and Cauliflower plants and Echeverias planted close to a warm wall. We also use it for protecting the sides and ends of frames in which Violets and young Carrots are growing. In very severe weather we heap it on the tops of handlights and frames in which cuttings of bedding *Calceolarias* are growing, and in that case we do not remove it until all danger of frost is over, as they take no harm in such weather, even if covered up for a month or six weeks.

J. C. C.

5271.—**Fishponds.**—There is no doubt that "W. H. B." will succeed in making his pond for aquatics and fish water-tight by carrying out the work in the way he proposes, viz., to excavate to the depth of 5 feet, and then puddle the bottom and sides with a foot thick of clay. The difficulty will be to keep it full of water from the limited supply mentioned. He seems to be dependent on the rain and a pump; and therefore unless much surface drainage could be conducted to the pond, or a great deal of labour expended in pumping, it would be impossible to keep the pond full; or even if that could be accomplished, the water, from having no overflow and so little going in, would become offensive, especially during a hot summer like the one just over. Is there not a spring or stream at no great distance, that could be utilised by putting a ram down, which might supply the house and garden, and then the waste could be carried into the pond?—S. D.

—If "W. H. B." will profit by my dearly-bought experience in pond-making, he will not

clay his bottom before he has laid down 4 inches of well-rammed concrete, otherwise the water will surely sooner or later escape into the porous soil beneath. He should also construct a thin wall, which must be grouted round the sides from the lowest level of the bottom up to the edge, as a backing for the clay and a safeguard against the incursions of moles and rats; he may then ram on the clay, gradually sloping it from the edge to the centre. If thus properly made he will have a pond that will give him no further trouble. In no kind of work does the old adage, "A thing well done is twice done," better apply than to pond-making. Imperfectly performed, it is a source of continual annoyance and vexation. The pumping is merely a question of labour, which "W. H. B." best knows whether he can command or not.—J. M., *Charmouth, Dorset.*

FRUIT GARDEN.

FRUIT GROWING FOR MARKET.

THE most favourable season for planting the majority of fruits having now arrived, a few notes on kinds most in request may be acceptable. Enormous as are the importations of foreign fruit, our markets are not overstocked, and there is yet a good demand for English-grown fruit, which is better flavoured than that which is imported. The latter is good to look at, but as more than the eye has to be satisfied, it is essential that the flavour be also good. Foreign Grapes are at present offered in every shop window at 6d. per pound, but English-grown ones are selling at from 1s. 6d. to 2s. 6d. per pound—a difference solely due to quality. The fruits of France and the Channel Islands come to hand about as fresh as our home-grown supplies, yet they are not so good. Boxes of French Plums, especially Green Gages, look most tempting, but, like the Grapes, they fail when one comes to taste them. Tomatoes, too, come in large consignments, but their quality is inferior to that of English ones; and last, but not least, the American Apples now arriving in barrels are not equal to home-grown produce; indeed, the more I see of foreign fruit, the more am I convinced that we can hold our own in regard to many kinds, Pine-apples excepted. In these days, when the question of how to profitably employ arable land is occupying so much attention, it is surprising that fruit culture does not make even more advance in this country than it is doing. It is only in Kent and a few other metropolitan districts that one finds fruit culture receiving that attention which it deserves.

APPLE TREES are unquestionably the safest to plant, the demand for good home-grown Apples being far beyond the supply. A ready sale is always to be found for really good fruit, but to get the maximum price in the market the sample must be good. Poor specked fruits, the produce of worn-out trees, do not pay; therefore the old decrepit standard trees seen in all parts of the kingdom should be grubbed up, and young healthy bushes or standards substituted. It is a mistake to suppose that one must wait years for fruit, for if good trees are planted they commence to bear at once, and soon repay the extra money which they cost. Dwarf bush trees planted 10 feet or 12 feet apart will be found to yield better returns than any other kind of tree, but no intermediate crop whatever should be planted on the same ground. Crops from trees thus managed would not only be large in quantity, but of first-rate quality. If the soil is well prepared before planting, very little cultivation will be needed afterwards, except keeping the surface free from weeds and top-dressing the roots every winter. The pruning of such bushes is of the easiest kind, viz., pinching the points off the shoots in July and cutting out weakly or immature growths in winter. At the present time good home-grown Apples are worth 5s. per bushel, a sum which pays for good culture. It is a mistake to suppose that Apples only thrive in Kent, Somerset, or Devon; give them a fair chance in other counties, and they will do equally well. In this locality the soil is by no

means adapted for producing large standard trees, but dwarf bushes we could grow equal to any part of the kingdom; the moderate growth they make gets thoroughly ripened, and plenty of fruit buds are produced every year.

CHERRIES are one of the fruits that do best as standards in Grass orchards, kept grazed down close by sheep; they are surface-rooters, and do not like having their fibres cut by constant digging. The Morello may, however, be most successfully grown as a bush on the Mahaleb stock. One of the things to avoid in Cherry culture is pruning; they do not like the knife, nor do they need it, for every shoot becomes wreathed with bloom, and the only pruning they require is to break out the dead wood.

CURRENTS, Red, White, and Black, are, perhaps, the surest cropping fruits we have, and the demand increases quite as fast as the supply. In order to get fine fruit the bushes should be planted in open, sunny positions; it is useless to expect first-rate fruit from bushes grown under the shade of tall standard trees. Plant from 6 feet to 8 feet apart, treat liberally, and they will well repay the cultivator. I have seen bushes of Raby Castle Red and of the Black Naples and Baldwin varieties, well treated, produce fruit in bunches more like Grapes than the Currants one too often sees, and the English-grown Currants are equal to any in the world; in fact, we could export them at a profit.

DAMSONS AND BULLACES are amongst fruits long neglected; they are well grown in Kent and in a few other counties, but in many towns they can hardly be procured at all. They grow freely in hedgerows or in any kind of position, but as standards in orchards on Grass, or as bushes in cultivated land, they are most prolific and remunerative. Plenty of land now idle would yield a good return if planted with these hardy and useful fruits.

FIGS are well worthy of more extensive culture than they receive, for in localities where they succeed, as, for instance, on the south coast, they scarcely ever suffer from frost, and ripen good crops as standards or bushes. This season I tasted as thoroughly ripened fruit of the White Marseilles and Brown Turkey as ever I had from trees under glass, and yet the trees were more than a century old; therefore there is nothing new in the fact that good Figs may be grown out of doors. How we systematically ignore many of the advantages for doing so which we possess is, however, singular. Fig culture needs carrying out properly to make it a success; the fruit would sell freely enough if sent to market, but it occurs there in no great abundance.

GRAPES.—Well, enough has been written about Grapes. I will only, therefore, briefly state that it is here where we get the full force of foreign competition. I do not, however, despair of home growers being yet able to produce Grapes at a profit, though sold at a price that would ensure a rapid sale. Of course the supply varies in different localities; for instance, in coast towns it is greatest during the autumn months, when they can be produced without the aid of fire heat, or with but very little, and notwithstanding great competition I think it will be many years before Grape growing for market is a thing of the past, although it does not offer any golden dreams to cause a rush into the undertaking.

GOOSEBERRIES seldom fail, and the demand for them in a green state for culinary purposes, and ripe for dessert, and lately for preserving or jam manufacture, is very great. They do fairly well as an intermediate crop, but I like to grow them by themselves planted from 6 feet to 8 feet apart. The Warrington is still one of the best late kinds, and by netting it up it can be kept good for many weeks.

FILBERTS and other Nuts, especially Cob Nuts, are fruits about which there need be no fear that they will be excelled or driven out of cultivation by foreign competition. Kent Cobs are noted for their superior quality, and they could be grown to perfection in many other parts of the kingdom if the same attention was given them as they get in

Kent. They flourish on stony land, such as prevails on the south coast, and a good crop of Nuts is one of the most profitable crops that market fruitmen can grow. The bushes should be planted about 12 feet apart and trained in cup-shaped form, the centre being kept quite open. The main point needing attention is the mode of pruning. In districts where Nuts are largely grown it is performed by men who make pruning a speciality, and anyone attempting the culture of Nuts without the aid of experienced pruners would probably fail.

PEARS have never been very popular with market growers. They have hitherto only grown common kinds that succeed as standards, leaving the best dessert sorts to be supplied by the Channel Islands or French growers. There is, however, a good opening for our own growers, provided they would produce the choicest kinds. Anyone who has visited Barham Court and seen the splendid crops of Pears grown there in the open air may rest assured that in the south of England at least as good fruit can be produced as we now import; such kinds as Duchesse d'Angoulême, Easter Beurré, and others of that type that are always saleable at good prices offer far better prospects for the grower than many of the crops grown wholly under glass. In this part the Pear ripens to perfection on bush trees, and with half the attention required to produce Grapes, I feel sure that Pears would yield far more profit.

PLUMS have long been a popular market fruit, and in years of plenty prices for them sometimes run very low, but the reason of this is a glut of ripe fruit at one time. In planting for market, the very earliest kinds, like the Early Prolific (Rivers's), that ripens in July, and that valuable late kind called Wydale, should be largely planted, for they prolong the season at both ends, and if fruit growing is to prosper, skill and intelligence of this kind must be brought to bear on it. The requirements of the market, too, must be studied by those who supply it.

PEACHES AND NECTARINES are safe fruits to plant under glass, for they never fail to produce a crop, i.e., if not overdone one year, so as to cripple them for the next. Under the protection of a glass roof these valuable fruits are safe from vicissitudes of weather, and, above all, the wood gets well ripened. In some localities Peach forcing pays well, but for the majority of provincial towns it will be found the most remunerative to grow a good selection of kinds that ripen in succession by means of solar heat alone. As to the question of houses v. walls and glass copings, I should say, decidedly have houses and make sure of crops; good fruit will always pay the grower.

RASPBERRIES have of late been extensively planted as a field crop in rows about a yard apart, no stakes being used; the canes are cut down to about 3 feet high, and are at that height self-supporting. The great demand for Raspberries for preserving will keep the market from being overstocked for some time to come. Raspberries need liberal treatment and good soil deeply cultivated to begin with; afterwards they are easily managed, and at present they offer a good prospect of remaining a lucrative crop.

STRAWBERRIES are, in this locality, the most largely grown of any market fruit, the soil being specially suited to their requirements. Hundreds of acres of good beds exist within a few miles of us, and if we get a jam factory to take off the surplus fruit when it gets too low in price to be remunerative for dessert, we may reasonably expect a great impetus to be given to planting. Near large towns, however, local growers who can carry their fruit into market freshly picked will not need such means for disposing of it.

TOMATOES.—If there is one fruit more than another that has exceeded our most sanguine expectations as regards demand it is the Tomato. In this district good crops of it are ripened out of doors, but it is under glass that I can most confidently recommend its culture to the attention of market growers. Although foreign competition in this fruit is great, I feel sure that home growers have only to supply a superior article to defy all

comers; up to the present I have seen no foreign Tomatoes equal to those of home growth. I am still of opinion that market fruit growing offers a good field for enterprise to those who can bring practical knowledge as well as capital into the undertaking, but the land must be at a reasonable rent, and tenants must be made secure as regards outlay on improvements.

Gosport.

JAMES GROOM.

Apples worth growing.—If, in your issue of last week (p. 443), "W. I. M." really means Flower, and not Beauty, of Kent, the Apple he is growing by that name is very different from the one supplied from the Merriott Nurseries. Flower of Kent, as supplied from that establishment, is a conical Apple streaked nearly all over the surface with red. It is, in fact, as unlike Blenheim Orange as Emperor Alexander is. Nevertheless, it is a good culinary fruit and an extraordinarily heavy cropper on the Paradise stock. I am speaking in this instance of trees planted in a heavy brick earth, with a calcareous subsoil. Perhaps I may be allowed to call attention to two varieties not so much grown as they ought to be, *i.e.*, Grenadier and Dredge's Fame. The former is very like Lord Suffield in shape and texture of flesh, but is green and hard when his lordship is yellow and soft. On the Crab it is very prolific, and is altogether a most desirable Apple, which keeps up the supply of Lord Suffields till December. The other is one of the best cordon Apples in cultivation. It is a late keeping sort, and good enough for a select dessert.—C. A. M. C.

No manure best for young Vines.—If any of your readers should adopt the treatment recommended by "Cambrian" for borders for freshly-planted Vines (p. 444), they will never regret it. It is high time that this question of manuring was treated more rationally than it hitherto has been by those interested. Curiously enough, the day after reading "W. I. M.'s" paper on faulty Vine borders, I saw one in which the lowest spit of soil had been so copiously manured, that all the roots had gone thither. The consequence was that all the surface manuring was useless. For additional nutriment a dead horse had been buried, and it is needless to say that not a root went that way if it could help it. On no sane principle of hygiene can it be maintained that young things, whether animal or vegetable, ought to be started on a surfeit of nutriment. As "Cambrian" advises, let them be planted in good maiden loam, and then the after manuring will keep the roots on the surface. In damp seasons, if the border is outside, it ought to be covered with boarding or corrugated iron.—C. A. M. C.

**** The burying of dead animals in Vine borders**—a practice recommended by the late Mr. Roberts in his book on the Vine—has long ago been shown to be bad, and few now think of resorting to it. Carrion killed the roots of the Vines at Raby, and it is equally destructive wherever it is used.—ED.

Muscat Grapes in cool houses.—That Muscat Grapes may be ripened in cool houses, or rather in houses not artificially heated, has been proved again and again, but much of the success in getting them in that forward condition depends on the situation and form of the structure they are in and the weather we happen to get, for unless favoured with a sunny summer, it is impossible to obtain the necessary warmth by early closing to mature the berries and finish them properly. In a season like that just over, ripening Muscats is anywhere easy enough. For a house to be of any service to ripen Muscats without being artificially warmed, it must be a lean-to, stand full south, so as to catch all the sun-rays possible, but even then a vinery is of very little use unless there are means of drying it, either by the aid of pipes or flues, as should there come a dull time when the Vines are in flower, damp will spoil their setting, as well as the berries when ripe. The only difference in Mr. Groom's treatment from that of others is that he appears to have a slightly lower night temperature, as his shutting up at 2 p.m. would most

certainly raise the heat to 80° or 90° or more, and no one would think of greater warmth. Next season perhaps Mr. Groom may have reason to fall back on the help of his fires, exceptionally well situated as he is as regards climate.—S. D.

GARDEN FLORA.

PLATE 468.

COREOPSIS LANCEOLATA.*

THE genus *Coreopsis*, as far as it concerns English flower gardens, is confined in its native range to the eastern half of North America, for though it contains species belonging to Tropical Africa and the South Sea Islands, these are, of

Asa Gray, though in some instances differing from those which have hitherto prevailed in England. *Coreopsis* is now made to include *Calliopsis*, by which name the annual forms are still generally called.

C. LANCEOLATA (with lanceolate leaves), the subject of our coloured illustration, is decidedly for English gardens the best perennial of the genus. It grows about 2 feet high, bearing through July and August its large golden flowers on stiff, slender stalks admirably adapted for cutting. The undivided, opposite leaves are the most obvious distinctive character. The plant has a wide range in North America, extending to Upper Canada, so that it is perfectly hardy and easy of cultivation. It likes a warm, sunny, well-drained



Coreopsis aristosa (flowers yellow, natural size).

course, not available for out-door gardening. The name signifies "bug formed," and was given from the resemblance of the broad and flat brown seeds to that insect. Dr. Asa Gray, in his "Synoptical Flora of North America," describes twenty-eight species, of which more than half are perennial. Some of these, which belong exclusively to the Southern States bordering on the Gulf of Mexico, seem incapable of being domesticated in England, but others are well known as amongst the brightest ornaments of our summer gardens. In the description of those which are selected for notice here we have adopted the names and characters of

position, and should be watered in dry weather whilst coming into flower. The plant is easily divided early in autumn by lifting it and pulling it to pieces carefully—a plan far preferable to the barbarous practice of chopping to pieces with a spade. By planting small pieces separately in rich soil a larger crop of finer flowers is obtained than by allowing the heads to become crowded for want of frequent division.

C. GRANDIFLORA.—This comes very near the last, which is often sold for it in English nurseries, and I am not sure where the true plant can be seen growing in England. It differs in having the cauline leaves finely divided into three or five linear parts. It is said in its native country to bear larger flowers than *C. lanceolata*, but being a more southern species, it is less adapted to

* Drawn at Munstead, August 1.



English gardens, where it is often only of annual duration, and where it seldom is seen at its best. It is well figured in Sweet's "English Flower Garden," tab. 175. Asa Gray gives *C. longipes* as a synonym (see *Botanical Magazine*, 3586), but the *C. longipes* in English cultivation is inferior to *C. lanceolata*, and has generally entire leaves.

C. PUBESCENS (with downy leaves).—The down which gives its name to this species is by no means conspicuous, but easily seen with a small magnifying power, under which *C. lanceolata* appears quite smooth. The plant is generally known in England as *C. auriculata*. It is much taller and



Coreopsis coronata.

more leafy than *C. lanceolata*, and has smaller flowers, and the leaves have mostly two lateral lobes or auricles.

C. AURICULATA (with leaves bearing lateral appendages) resembles a low and weak form of the last, with flowers even smaller, stalks not more than a foot long, generally growing prostrate. Probably not in cultivation in England, not being worth it.

C. PALMATA (with palmate leaves, *i.e.*, with divisions diverging from a flat centre, like fingers spreading from the palm of a hand), a species of no great merit, and perhaps not now remaining in cultivation with us, mentioned on account of its



Coreopsis tinctoria.

synonym, *C. præcox*, which often appears in nursery catalogues. The plant I have received under the name is a very inferior form of *Helenium autumnale*.

C. VERTICILLATA (with whorled leaves), generally grown as *C. tenuifolia*, which Dr. Gray gives as a synonym, is a neat and elegant plant a foot high, with leaves finely dissected into filiform divisions, bearing quite at the end of summer pale yellow flowers $1\frac{1}{2}$ inches across. Its native range extends into Canada; still it is a weak grower in English gardens and is easily lost, requiring a warm, moist sandy soil.

C. DELPHINIFOLIA (with leaves like a Delphinium or Larkspur), generally grown in England

as *C. verticillata*, by which name it is figured in *Botanical Magazine*, tab. 156, is a taller and stouter plant than the last, 2 feet high, with more, but smaller flowers. The divisions of the leaves are fewer and wider and the roots spread less.

C. SENIFOLIA (with leaves in whorls of six, each of the opposite leaves being divided into three lanceolate lobes, so as to give this appearance) is stouter and taller than the last, 3 feet high. Figured in *Botanical Magazine*, tab. 3484.

C. TRIPTERIS (with leaves like three-feathered wings).—A tall and rather coarse plant, 6 feet or more high, not unlike a magnified form of the last. The flowers, which are produced late, hardly compensate either in size or brightness for the room the plant takes.

C. ROSEA.—A *Coreopsis* with rose-coloured flowers sounds attractive, but I have cultivated this plant for many years without being able to discover much merit in it as an ornament. It is a weak-stemmed, little plant, less than a foot high, with crowded stalks bearing flowers, of a dull pink, with dingy greenish discs, hardly larger than lawn Daisies.

The following annual forms are all worth growing. They are generally offered in seed catalogues under the name of *Calliopsis*. When well grown they bear flowers nearly as large and as bright as those of *C. lanceolata*, mostly varied with dark markings:—

C. TINCTORIA (figured in *Botanical Magazine*, 3511, and Sweet's "English Flower Garden," i., 72) grows 3 feet high, with golden flowers more or less marked in the centre, according to the variety, with crimson-brown.

C. DRUMMONDI (figured in *Botanical Magazine*, 3474, and in Sweet's "English Flower Garden," ii., 315), not nearly as tall as the last, but with larger flowers; dark crimson marks confined to the base of the petals.

C. CORONATA (figured in *Botanical Magazine*, 3460), a foot or more high; bright yellow, with deep orange in centre, marked delicately with brown-purple.

C. ARISTOSA (figured in *Botanical Magazine*, 6462), 2 feet or more high; flowers uniform golden yellow; leaves incised and the divisions serrate; a fine species.

C. WOLLEY DOD.

Edge Hall.

Cape Pondweed.—Late and early this is always a welcome visitor to our tanks and lakes, emitting a fragrance hardly equalled by our own native May; indeed, we have somewhere seen it called Cape May-thorn—not a very appropriate name, however. As long as the weather remains open, it throws up well above the water its ivory-white, curiously formed flowers, relieved by intensely black anthers. This season it is flowering now with as great freedom as it generally does in the middle of July, and we are not without hope of a gathering of its blossoms at Christmas, weather permitting. It also stands forcing well, and abundantly repays any extra care taken in securing for it a favoured spot in an intermediate house, a good sized tub being all that is necessary. Out-of-doors the secret of success, we think, lies in deep planting—not less than a foot below the surface, and where the roots will be away from frost. The *Aponogeton* is also partial to good feeding, and will be all the better for a top-dressing of half-spent manure in spring, which never fails to give fresh vigour to the hard-worked tubers. It ripens seeds freely, but as these come to maturity under water they are gathered with difficulty. Young seedlings may, however, be seen by the hundred early in spring pushing their tiny light green, strap-shaped leaves through the water. We believe this plant has been successfully naturalised in some of the Highland lakes. So robust and thoroughly at home does it seem, that we lately had a difficulty in convincing a discoverer of the locality in which it grows that it was not a native of this country. Its home in the Highlands is at present nameless, and not easily accessible.—K.

INDOOR GARDEN.

POTS WITHIN POTS.

I HAVE often felt surprise that the advantages of placing one pot within another has not been recognised by plant growers. In one pot the roots must be exposed to atmospheric changes calculated to act prejudicially upon them. In warm houses which do not get much ventilation, and which are shaded from hot sunshine, this disadvantage is not so apparent, but in the case of cool houses where air is freely admitted and where the force of the sun is fully felt, it is evident that those roots which work their way to the side of the pot are not happily placed. Let anyone place their hand on the outside of a pot nearest the sun on a fine day and they will be ready to admit that the tender rootlets of the plant growing in it must be sorely tried. It is the same in the open air, although it is possible, if not always practicable, to plunge the pots, but it is even worse in the case of pots standing on window-ledges, balconies, and similar places, as they not only often get the full sun upon some portion of their surface, but are exposed to every drying current of air. The wonder is that plants thus circumstanced can live



Coreopsis Drummondii.

and thrive. Wherever plant culture is attempted on the outside of windows some provision should be made for screening the pots from the full force of the sun. There is nothing better than a box made to fit the window-ledge and the full depth of the pots intended to be placed in it. This alone will infinitely help the plants, and if in addition some Moss is stuffed in between the pots there will be a greater resemblance to the conditions which plants enjoy when growing naturally. Where this plan cannot be adopted the pots may be put in others a size larger, so that the roots will at any rate receive double protection.

WHEN GROWING DELICATE-ROOTED PLANTS in cool houses I have frequently placed one pot in another two sizes larger, ramming Moss or something similar in between them. The advantage of this is that it not only guards the roots against the chilling influence of a free circulation of air, but preserves the soil in a more equable condition as regards moisture. Everyone who has much to do with plant growing is aware that there is one condition of the soil which greatly favours root production—viz, between wet and dry, or what is often termed "just moist." It is a knowledge of this fact which causes us to plunge and cover over bulbs when potted, as the greatest quantity of roots is made when the soil has not to be watered and yet does not become dry ere the growth issues from the bulb. Mainly on this account, too, are cuttings and seedlings kept rather close and always screened from currents of air until the roots fairly touch the sides of the pot. At one time I

used to rather largely grow the tuberous-rooted *Tropæolum*, and never succeeded so well under pot culture as when I set one pot within another and filled the space between them with Moss. Until I adopted this method I never could manage the rather miffy, delicate-rooted *T. azureum*.

THE POT-WITHIN-POT SYSTEM I used to find helpful in regulating the watering of such plants as this, as, if on looking through in the morning the soil was nearly, but not quite ready for more water, I knew I could leave it till the next day; and there is nothing so injurious as giving a plant water now, because it will in all probability need some a few hours hence. I feel sure that in the case of plants grown in small pots for decorative purposes the plan here recommended would be found to answer well, and as to the labour involved therein, it would simply be a matter of first outlay, to be quickly compensated for by a decrease in the watering. A plant with its roots in a 2½-inch pot put into a 4½-inch pot with Moss rammed in between the two is more easily managed and does not require half the attention that it would have done had it been shifted. My impression is that plants are far too often repotted; with a top-dressing and double potting better plants would often be obtained, and they would be better fitted for the purpose for which they are intended. In the raising of seeds I have often practised the pot-within-pot system, as when the pots or pans are removed to a more airy situation, more water is generally required, and tender root-lets frequently get surcharged. By thoroughly moistening the Moss stuffing every day or two the soil is easily kept in just the right state of moisture down to the bottom of the pot; whereas in an ordinary way the lowermost part of the compost dries out nearly as soon as the top, and a rather heavy watering is required to moisten it through. By wetting the stuffing material and giving a light sprinkling over the surface soil, the conditions best suited to root production, and therefore to healthy growth, are easily maintained.

J. C. B.

PERSIAN CYCLAMENS.

THERE are few, if any, dwarf flowering plants to equal the *Cyclamen persicum* and its varieties for decorative purposes during winter. When well grown they are wonderfully effective, whether arranged in groups, lines, or singly among other plants. For affording cut flowers in quantity and over a long period they are invaluable. The improvements effected of late years in the various strains have been most marked; the foliage of many is now strikingly handsome, and the fine large flowers, ranging in colour from purest white to the deepest purple, are in many cases strongly and pleasingly scented. A large mixed packet should contain sufficient seeds to meet the requirements of most private gardens, and the present is the best time for sowing. Use for the purpose well-drained pots or seed pans; fill these to within an inch of the rim with a finely-sifted mixture of loam, leaf-soil, and sand. On this the seeds should be sown, pressed in, and covered with about a quarter of an inch of fine soil; then place them in a house where a temperature of from 50° to 60° is maintained and water them through a fine-rosed pot if the soil is at all dry, covering them with squares of glass. As soon as the seedlings appear they should have a light position to prevent them from becoming unduly drawn, and by the time they have made a couple of leaves they will be ready for pricking off into pans in a soil similar to that just named. It is important that they be kept in a warm house until spring, so as to keep them steadily growing, as they make but little progress when subjected to cool treatment. In fact, they do better if kept warmer than most greenhouse plants until they begin to open their flowers, when they will last longer in perfection if kept somewhat cooler.

In spring they will require potting off singly into 3-inch pots, which ought to be filled with roots by the beginning or end of June; then they should be potted into others 5 inches in diameter, which we find sufficiently large for the first year's

growth. The best soil for this shift consists of three parts of good turfy loam to one of well-rotted cow manure, adding a little soot and sand, and the combs should not be more than half buried in the soil, otherwise when the flowering season arrives many of the blooms will decay prematurely. From this date a warm pit would be the best position, kept as near the glass as possible, and giving sufficient air to maintain a sturdy growth. Slight shading must be resorted to during bright weather, either by means of lime-wash or thin shading material drawn over the lights; the former is the method most generally adopted, and perhaps the best. Watering must be carefully attended to; do not allow them to become very dry or very wet, and the water should never be poured directly into the centre of the plant, but around the sides of the pot. Cyclamens are benefited by syringing on the afternoons of fine days, an operation which also serves to keep insects in check. They are most liable to attacks from green fly, thrips, and also red spider; fumigating with tobacco paper will destroy the former. Sponging carefully with soapy water is the most effectual for the two latter, but none of them must be allowed to become well established, or they will seriously check growth.

When they begin to throw up their flowers they should be favoured with a light position in the greenhouse and receive an occasional watering with liquid manure; plenty of air should also be given on favourable occasions. After they have finished blooming all the old flower-stems should be removed and the plants kept a little dry at the roots in order to rest them for a time, but they should not be dried off too severely, or many of them will become nearly or quite blind. When the combs show signs of growing, they should be shaken out of the old soil and repotted in pots one or two sizes larger, using a compost similar to that recommended for the young plants, and their subsequent treatment should also be similar. Old plants will grow and flower for several years, but it is a good plan to raise a number of seedlings every year, as they produce much the finest blooms if somewhat fewer in number. Old plants do remarkably well when planted out in moderately rich soil about the beginning of June. They should be lifted again in the autumn and repotted, taking care to shade them from bright sunshine till re-established. Whenever flower-stems are removed or blooms are required, they should be pulled clean off the combs, as should a part of a stem be left, this is liable to spread decay all around it.

W. I. M.

Eucharis Sanderi.—Mr. Hardy, Pickering Lodge, Timperley, grows this lovely *Eucharis* to perfection. It is not only a free flowerer, pure white, and good in substance, but several of the blooms which I saw consisted of nine petals, the inner ones being smaller than the others and finely imbricated. This is, perhaps, the result of high cultivation, as the other varieties of *Eucharis* here are also very fine and robust. All seem to luxuriate in sandy loam and a warm, moist atmosphere, with an occasional dose of liquid manure.—A. I.

SHORT NOTES.—INDOOR.

Fuchsia Dominiana may be safely called one of the brightest and best of cool conservatory pillar shrubs. It has never been out of bloom since this time last year, and promises never to go out of bloom any more. It must, however, be planted out.—T. SMITH, *Nearly*.

Rivina humilis.—As showing the tropical character of the past summer, I may mention that I dug up one of the outside vine borders at the end of October a self-sown plant of *Rivina humilis* that had grown to a height of 6 inches. Being a stove plant, I thought the position an unusual one in which to find it.—J. C. C.

Hothouse boilers.—The adoption of what are called Rochford's boilers greatly simplifies the question of heating hothouses and like structures. They are simply prolongations in the boiler of the ordinary water companies' small pipes. Some of the greatest market gardeners about London are employing them successfully to heat their enormous houses. It does away with the enormous amount of complicated and expensive ironwork, and many of the puzzles that have hitherto amused the boiler maker. Mr. Ladds, of Bexley, has employed them extensively and with great success and economy.

Ipomœa rubra cœrulea.—This beautiful winter-blooming annual climber is a great favourite in the boudoir here in the mass as a cut flower. It is not often treated with too much heat. Our treatment is as follows: We sow in heat in spring, prick off the young plants into 3-inch or 4-inch pots, grow them on in heat until ready for another shift, say into 6-inch pots, keep them in a moderate temperature until the roots begin to feel the pots, then place them in cold frames during the summer months. We take them into an intermediate house in October, from the end of which they will bloom profusely more or less till April, if shifted into 8-inch pots still longer. One proviso must be attended to, and that is every spent bloom with its seed-pod must be picked off each eve or morn, for one seed-pod allowed to develop will curtail the existence of the plant by months.—CYMRO.

Naturally grown Chrysanthemums.

—On a recent visit to Eastbury Manor, Guildford, I saw a charming display of Chrysanthemums, the quantity of bloom that some plants in 8-inch pots were carrying being remarkable. They were fully a yard in diameter, with at least a hundred good blooms on each. These plants were plunged in ashes in the open air during summer and kept well supplied with liquid manure; when the time for taking them indoors arrived they were found to have rooted through the pots considerably, but by setting them in a shaded place and keeping them well supplied with water, both at roots and overhead, they soon recovered the check sustained by removal. Thus plants in 8-inch pots were quite as large as they possibly could have been had they been in very large pots with roots confined solely to the soil in the pot, and I need hardly say that for decorative purposes a large plant in a small pot is a great gain. Not the least of the many good qualities belonging to Chrysanthemums is the way in which they submit to a reduction of their roots after the bloom buds are formed, and growers who have to fill large conservatories will find the plan just recorded to produce plants marvels of good health with a minimum of labour expended on their production.—J. GROOM, *Gosport*.

Sonerilas.—Like *Pleromas*, *Lasiandras*, and several other *Melastomads*, *Sonerilas* are pretty and useful winter-flowering plants. If grown in baskets suspended near the roof of a warm, moist house and kept free from insects during the summer, all the *Sonerilas* prove good flowerers on the approach of winter. In the T range at Kew we noticed several pretty baskets of them obtained in this way, and these last week were almost perfect balls of pale pink flowers and silver-mottled leaves. Under favourable treatment *Sonerilas* seed freely under cultivation, and thus afford an easy means of obtaining a stock of them, for, being annuals, it is exceedingly difficult to keep them through the winter, so as to obtain cuttings of them in spring. The effect of the fogs of the last few days on *Sonerilas* has already shown itself in the damping off of their flowers and leaves. It is surprising how disastrous a London fog is in a house filled with flowers. We have observed its ill effects on many plants this year which hitherto did not appear to have been injured by it; *Begonias*, *Streptocarpus*, *Chrysanthemums*, and many other plants were affected by the fogs of last week. For this the only remedy, or rather partial remedy, is the judicious use of fire-heat and careful ventilation, with a view to keeping the atmosphere in the houses as dry as possible during the prevalence of foggy weather.—B.

Fuchsias planted out under glass.

Few plants are so well adapted for planting out in cool conservatories as Fuchsias, and yet one does not often see them thus employed. What can be finer than a Fuchsia 10 feet in height and 4 feet through, laden with flowers? It requires really skilful culture to obtain such a result in pots, but there is no difficulty in doing so by planting out. Then, again, how fine they look trained to the rafters, a position in which the major portion of the varieties display themselves to the best advantage. I once saw on the banks

of the lake of Thun, in Switzerland, a house in which the best kinds were used in that way. It formed one of the prettiest floral pictures I ever saw, the plants being very luxuriant and carrying an immense number of finely-developed blooms. I think it is a great pity that Fuchsias should not be more frequently employed in this way in ordinary greenhouses, as they would effectually embellish them during the summer, and, being easily kept within bounds, would not interfere much with the well-being of other plants grown in pots. Dropping their foliage by the time the darkest days arrive, they would not materially obstruct the light from bedding plants or other things wintered in such places. Single varieties are most suitable for the purpose, but some of the stronger growing doubles would do very well. The principal point is to thoroughly sweeten the soil for their reception, as a compost which clogs and becomes in the least sour is not fitted for the growth of Fuchsias, the roots of which are more tender and have less penetrative power than those of many flowering plants. If this is attended to, they will not need a change of soil for years.—J. C. B.

KITCHEN GARDEN.

SEED POTATOES IN WINTER.

WHEN Potatoes are being grown or harvested much anxiety is shown in regard to their welfare, but when under cover it is thought they are right for months, and little or no concern is felt for their safety or attention devoted to the care of the seed so long as it does not actually decay. In my opinion, however, great benefits result from attending well to seed Potatoes in winter, no matter how sound they appeared to be when stored. In looking them over once a month or so until planting time it will be found that some of them are decaying, and especially will this be the case with such beautiful show kinds as International, Porter's Excelsior, Red Emperor, Grampian, and other delicate sorts. When stored in heaps, as they have to be in many instances, one or two decaying in the centre, and allowed to remain there, will soon cause others to perish. This must be guarded against where sound seed is valued, and a general turning over and picking out of bad tubers at frequent intervals is the only way to keep the seed in good condition. Small and medium-sized tubers generally keep better than very large ones, and those who selected their seed at digging-up time will have fewer decaying ones amongst them than if the whole—large and small—had been stored up together.

SEED POTATOES may be kept very well in the dark, but they will do equally well, and often better, in the light. The objection to a dark, close place is its tendency to force the tubers into growth. The shoots of many are rather liable to start prematurely under all conditions, but they are less so when kept cool and in the light. Robust green shoots will never push out so rapidly as drawn-out white ones. The latter are absolutely worthless, and should never be encouraged. When they grow to any great length the seed cannot be planted with them attached to it, and in breaking them off a good deal of harm is done. The best of all seed Potatoes are those which never require to be disbudged. The first shoots or main eyes are the strongest as a rule, and when these have to be broken off owing to coming too soon, those which follow are always weaker: and if the seed can be stored so as to retard growth until as late as possible, and then produce it of a robust character, strong stems and a good crop are sure to be the result. Some of the best Potato growers with whom I am acquainted never put one of their seed Potatoes on the top of each other, or more than two layers deep at most, and this is a good way of storing seed in winter. As the shelves in fruit rooms are emptied they might be profitably refilled with layers of the best seed Potatoes, and any spare rooms or lofts may be used in the same way—cool places, well lighted, but free from frost. In mild weather a good deal of air should be admitted, and in times of severe

frost, when they have to be covered over with hay or some other material, this should be taken off whenever it is not wanted.

KIDNEYS or any early varieties for frame culture and planting immediately after the new year need not now be checked, as it would be an advantage to allow them to sprout and have strong shoots by planting time. Other seed which may not be wanted until February or March should not be sprouting yet; but if it is, check it as much as possible by a cool atmosphere, and if some persist in growing after that it is best to break the most forward of the shoots off and let the back ones take their place. Shoots 1 inch or 2 inches in length now would be of no use on seed intended for planting in March, as they would be much too long by that time to be handled or put under ground. It is a difficult matter to keep the shoots from growing when once they have fairly begun to push; it is much better to keep them back now than allow them to grow and keep them at a standstill further on. Nothing worse could happen to seed Potatoes than having them stored in mounds during the winter, and allowing them to remain in that state until they have become an intricate mass of young shoots and roots, as the shoots do emit roots when growing in this manner, and they all derive vitality from the seed. Many who possess seed Potatoes may be unable to keep them thinly laid out in winter, but everyone may turn and air them, a practice that is very beneficial. When we are obliged to keep more than we approve of on the top of each other in autumn, we always find some means of spreading them out thinner in spring to harden the shoots before planting. The very late sorts, such as Rocks and Champions, do not start freely into growth at this season, or, indeed, during the winter, and it is kinds like these which should be massed together, when massing must be done, and as the early ones are cleared out and planted in spring, these can be spread out in their places. I do not approve of planting Potatoes with the eyes perfectly dormant, as it takes them so long to come through the soil, and some may fail altogether, which is hardly ever the case with properly sprouted seed, as none but those with shoots need be planted. I am inclined to think that a good deal of the degeneracy in Potato crops may be traced to badly used seed, and really good crops can only be expected from seed which is treated in a proper manner throughout the winter and spring.

J. MUIR.

Road scrapings.—In country districts these are generally obtained during the winter, and for certain purposes are most valuable. In the case of old vegetable gardens their application would often do much more good than two or three dressings of manure. For close, moisture-holding soils, difficult to work after rain, road scrapings are excellent, as owing to their gritty character they render such soils more friable and porous. More valuable than the scrapings, too, are the parings, which consist of grassy particles, and therefore contain a considerable amount of organic matter. A liberal addition of these to poor, light soils infinitely improves them. In a general way both scrapings and parings can be bought for 6d. a load, but I would recommend all who think of using the former to obtain the first lot collected, as this contains a large amount of manurial matter—horse droppings, which during the summer have been ground down into powder.—J. C. B.

Onions.—Mr. Muir's note upon Rousham Park Hero and Banbury Improved Onions naturally leads on to the asking whether there is any real distinction between these so-called kinds, and if there be, in what form is it to be found. Indeed, the same may be asked of not a few other so-called distinct Onions, all of which of the white Spanish type have diverse names, though little else that is diverse. It would be exceedingly interesting if some dozen or so of your best known kitchen gardeners would obtain direct from the trade houses which send out these kinds seed of each and sow it, growing bulbs as good as their soil would give

and then comparing notes in these pages at the end of the season. Now and then a trial of Onions takes place at Chiswick, for instance, but the general and interested mass of gardeners learn nothing of the results arrived at. Still farther attached to such a trial is the disadvantage that it has taken place in one spot only, and not in many. Now, were a trial of Onions conducted simultaneously in a dozen gardens in as many parts of the kingdom, the gardener in each case agreeing to favour no sort of seedsman, but cultivate all alike and to the very best of his ability, and to report upon the results fairly and with the utmost impartiality, the reports would be read with remarkable interest, and would be productive of great good. There are few gardeners who could not also get their reports countersigned by a couple of fellow-gardeners, who would assist the reporters in their interesting task. I might mention, for instance, such names as Muir, Simpson, Wildsmith, Clarke, Sheppard, and Clayton as a few who would probably be willing to assist, especially if seedsmen would furnish each with a packet of seed of their pet or selected kinds.—A. D.

Parsley.—When we read the elaborate description given by Mr. Christison, and the trouble and precaution needful in his estimation to be taken in order to secure a crop of ordinary garden Parsley, we may well wonder what gardening is coming to. Possibly, I am more fortunate than he is, and as it would seem, and indeed I know, many other gardeners are, yet I have out in an open field a bed of Parsley that is as good and as fresh, green, and vigorous as can possibly be desired; and from seed, too, sown in the open ground last May. Really, beyond the fact that the soil bore a crop of Potatoes last year, that it is rather poor than otherwise, and that the seed bed has been kept free from weeds by hoeing twice or thrice during the summer, I have nothing more to say. It is hardly the season for anyone to be anxious to refresh their eyes from the glare of the flower garden by gazing on a Parsley bed, but should such a desire haunt anyone, certainly they can have a thorough ocular reviver here. It is interesting to find that, although so near to us as Syon, and in a large number of the West Middlesex market gardens, it is a matter of extreme difficulty to raise respectable Parsley, and has been so for years; yet here we never have such trouble; in fact in a patch where some plants seeded last year seedlings have come up in thousands. During last summer, when heat and drought did so much harm to many things, the old seedling plants lost all their leaves, and the young seedlings seemed in danger of extermination. All leaves generally turned red, and it was thought they were being eaten up by a fungus, but that was a mistake; all is right now. To what cause we owe the extreme difficulty found in raising Parsley nearer London I cannot say; whether it be from fungus, or insects, or other causes, good service would be done to gardeners if a remedy could be found.—A. D., *Bedfont*.

ANIMAL MANURES IN GARDENS.

The remarks on this subject in THE GARDEN by "X. Y." (p. 376) are not in accordance with my experience. Will "X. Y." kindly state—first, in what month he cuts Seakale, Rhubarb, Cucumbers, and Marrows, and in what month he picks his first dish of Peas from the two late sorts which he grows? Second, will he also state what length and width his friend's two Asparagus beds are to require £16 for manure, and at what price animal manure is per load at his place in Devon? "X. Y." says the usual practice with Seakale is to cover it with earthenware pots and to load the plants with manure, but most gardeners at present lift their Seakale and Rhubarb and force them in either a Mushroom house or other dark, warm place. "X. Y." seems to be under the impression that any kind of vegetables will do for large places, no matter how coarse so long as they are large; but that is a mistake. Marrows, Peas, Carrots, and similar vegetables are required here

for table very small and young; we do not use such things as 2-foot Marrows, neither do I think many gardeners grow such large Marrows except for soups. I use manures in large quantities here both for vegetables and fruit. Our soil is clay, and quite impossible to trench 2 feet deep; indeed, 10 inches is about the depth we can dig for crops. "X. Y.'s" statements are, I am afraid, likely to mislead and cause vegetable growers trouble.

ROBERT GIDDINGS.

Coldra, Caerleon, Monmouth.

Parsley and Carrot crops.—Of the importance of these crops to the gardener I need not speak, as he must find Parsley nearly every day in the year from some source, and has to procure it elsewhere when he has none of his own, if it cost him 3s. or 4s. per pound in spring after severe winters, at which price I have seen it sold, roots, tops, and all going together. All round here Parsley is a complete failure this season. We have been getting ours, or most of it, from our poulterer in London with the fish for some time back. I met a number of gardeners at a show not long since, and none of them had a crop. The crop was fine in promise till the middle of July, after which it went off at the root, and although alive now, that is all. Carrots were equally promising, but turned out a failure. I have rarely seen the crop go off so wholesale in the garden or field. Grub and the fly did the mischief, but the real cause was the drought, against which no amount of water we were able to give was of much good. Such failures point to the need of deep trenching for such crops.—S. W.

Celery maggot.—It is somewhat remarkable that Celery should be so free from maggot this year, considering the way in which it was infested last summer and autumn. Its immunity this season cannot be from any effect of the past winter, as that was mild and free from heavy rain and snow, all, one would think, in favour of the pupae, and yet these could not have reached the fly stage, or we should now see Celery leaves eaten up by the grub in the way they have been before. One or two correspondents appear to be troubled with this pest, but most gardens are free from it, and in all that I have been Celery is looking remarkably well. We never had ours better, for though the summer was hot and dry, ours did not suffer in the least, for, according to our usual practice, we had it between the rows of Peas, which we sow at 8 feet or 10 feet part, according to the height to which the tops run. By managing in this way the Celery gets the necessary shade and fresh ground every year, as the one crop takes the place of the other. I note that one grower attributes his exemption from maggot this season to having heavy soil, but that seems to have little to do with the matter, as, according to his showing, he had suffered severely when others had it. Another writer is of opinion that he kept the fly away by the use of soot sown on the plants at different times, but there really seems to have been no flies to ward off. That soot is a good insecticide there can be no doubt, and it might have been effectual had the insects been on the wing, and as it does no harm, but a great deal of good by acting as a fertilising agent, it is advisable to use it on Celery if it can be got. As we appear to be much in the dark with regard to the maggot, perhaps some entomologist will tell us more about it, and why it has vanished in most places so suddenly after the ravages of last season, and whether we may hope to be as free from it next year. Perhaps we are indebted for its absence to our friends the birds, as they were able to work during the whole of last winter.—S. D.

Green Peas.—Mr. F. Bowles sends you green Peas (see p. 39) from Watford. I hail from much farther north, and send you a few Yorkshire Hero, from which we have gathered during the last few days. They are not very full, but are very good. Our Dahlias are still untouched by frost; in fact, Tomatoes and Heliotropes are the only plants that have as yet succumbed.—A. R., Windermere.

Good Peas for the middle of November, but, as stated, the pods are not very full and the Peas themselves irregular in size.—Ed.

Scotch Leeks.—I am afraid "Northerner" has never attempted to grow Leeks to such perfection as those shown at Dundee and Edinburgh, or if he has he must have failed, as I can conceive no other reason "Northerner" has for saying that Scotch gardeners bestow so much trouble on Leek growing as to treat them as exotics. If "Northerner" was fortunate enough to see the Leeks at Dundee shown both by gardeners and amateurs, he must have discovered for once that they did serve a practical purpose in letting northerners as well as southerners see to what perfection the Leek can be brought. "Northerner" labours under a mistaken idea in supposing that the Leek readily lends itself to monstrosity-culture any more than many of our common vegetables. There is no doubt that the Leek requires skilful culture if it is to be grown well, for it is one thing to have Leeks in November, but quite another to produce Leeks in the beginning of September thick and well blanched, as shown at Dundee and Edinburgh. To treat them as exotics would be to court total failure. And as one who has been long accustomed to supply first-class cooks with vegetables, I must say I never heard a complaint about big Leeks, but the reverse. The Leeks, however, formed but a small item in the vegetable department at Dundee, as when did "Northerner" or anyone else see such an amount of really first-class vegetables as were seen both in gardeners' and amateurs' classes on that occasion? Certainly not in Scotland; and if there were any monstrosities among the many varieties of vegetables exhibited there that served no practical purpose, they were not seen by me.—MIDLANDER.

Old garden soils and lime.—Owners of old gardens that have been long manured and cropped know that in the end the original basis of soil almost disappears, and is replaced by black humus or mould, derived from repeated manurings. I know gardens in which the surface soil, for perhaps 2 feet down, has become a sour black mould, and nothing else, although originally it was a stiff and yellow loam. In such old soils many crops refuse to thrive, Carrots, Parsley, Onions, Cabbages, Cauliflowers, Peas, Potatoes, and Turnips, for example. Some of these annually fall a prey to grubs, and others are not so productive as they should be, because the elements they need are absent or do not exist in sufficient quantity. All such old soils usually swarm with the plagues that prey upon plants. The cure for this state of things is lime, which is not applied to gardens half as much as it ought to be. Agriculturists find it needful to lime periodically, although field culture does not entail liming nearly so much as garden culture. I am speaking of soils, of course, where lime is not naturally present, and that have been over-manured. To these a dressing of lime is of the first importance, because it reduces to plant food, in a chemical sense, all the effete vegetable and animal substances existing in the soil previously only encumbering it, and makes a sour soil sweet and healthy. Its effect in producing fine clean Potatoes, where previously they have been worm-eaten and scabbed, is familiar to most cultivators, and its effect on other crops is similar. It does not matter much when lime is applied to kitchen garden ground, but it is best to apply it in the dry or newly-slaked state, and no fear need be felt about giving plenty of it; it should not, however, be dug in in a wet state. If spread on the surface, it should be left there till the soil becomes dry, when it may be forked in. I prefer to apply it in spring to previously trenched ground, forking it in with the crops. It may, however, be scattered on the ground now and left exposed all winter; and where gas lime is used, that is the best way to apply it, as it is full of sulphur and other impurities, but, after being exposed for some time, is just as good as any other. It is also cheaper and more easily procured in some places. One certain sign that a soil is over rich in humus and vegetable matter is the presence of worms, which in very old garden soils often exist in great numbers. A good dressing of lime put on and allowed to lie, and dug in when dry in spring, will banish them as if by magic.—S. W.

RECENT PLANT PORTRAITS.

BEGONIA GLOIRE DE SCEAUX (*Revue Horticole* for November 16).—This appears to be a very beautiful and free blooming hybrid with good-sized pale rose-coloured flowers, which are said to be all males; at least no female flowers have yet appeared on any of the plants. It is also interesting as being the first hybrid obtained between the distinct and curious peltate-leaved species *B. socotrana* and any other variety. It was obtained by the well-known hybridists, Messrs. Thibaut and Keteleer, of Sceaux, near Paris, by fertilising *B. socotrana* with the pollen of *B. subpeltata*. It has a stout erect stem growth and very handsome foliage, dark green marbled with white and with red veins above and deep vinous red underneath. It is said to be an almost constant bloomer, especially during the dull and flowerless months from October to May, which should add greatly to its value.

TUBEROUS BEGONIA MADAME LINDEN (*Illustration Horticole*, plate 535).—A very fine single-flowered variety of these most beautiful plants, raised by Messrs. Blancquaert and Vermeire; it is dwarf and compact in habit, and produces large and perfectly formed male blooms of fine, substance, borne on short stout upright footstalks, and of a bright carmine shade.

KEMPFERIA ORNATA (*Illustration Horticole*, plate 537).—A fine double plate of this handsome Bornean foliage plant, producing a profusion of long narrow pointed leaves, which are deep green with a broad white band down the centre above, and deep chocolate-brown underneath. It was sent to the Compagnie Continentale by their collector, M. Teuscher.

VRIESIA DUVALIANA (*Belgique Horticole* for May, 1884).—A fine double plate of this new Bromeliad, which is a native of Brazil, whence it was introduced in 1875 by M. Binot. It is named after M. E. Duval, of Versailles, who first bloomed the plant in France, and exhibited it at the meeting of the National Horticultural Society in Paris in May, 1883.

NIDULARIUM ACANTHOCRATER (*Belgique Horticole* for June, 1881).—A singular, low-growing, and somewhat inconspicuous and dull-coloured Bromeliad, which is also a native of Brazil, whence it was introduced in 1877 by M. Glazion, and bloomed for the first time in the Liege Potanic Garden in 1881. It was distributed during last year by Messrs. Jacob-Makoy, of Liege.

CHAMECLADON METALLICUM (*Illustration Horticole*, plate 539).—A fine double plate of this handsome Bornean Aroid, whose compact habit of growth and dark, bronzy green, deeply veined foliage, with light red stems, should make it an acquisition to collections of stove ornamental foliaged plants.

PHALENOPSIS STUARTIANA (*Illustration Horticole*, plate 540).—A pretty plate of this charming Orchid, believed by some to be a natural hybrid between *P. amabilis* or *grandiflora* and *P. Schilleriana* from fertilisation effected by insects. It has medium sized, pure white flowers with prettily orange-spotted lip and foliage exactly resembling that of *P. Schilleriana*. W. E. G.

Mountain Ash berries.—The writer on "Harvest Festivals" (p. 426) recommends the use of the Mountain Ash, waxed or dipped in spirits of wine, to which let me add Berberries, or, as usually pronounced, Barberries, such as are to be found growing in different parts of Perthshire, as these keep their colour and form better than Rowans (Scotch for Mountain Ash), even when used without being subjected to any artificial treatment. Nothing can be prettier than a Barberry hedge laden with fruit in various stages of ripeness about the end of September, and I am surprised that this bush is not better known and more widely used for ornamental purposes than it seems to be. It is easily grown from seed, berries which have hung upon a gasalier all winter germinating quite freely when sown in the open in spring, as I

can testify from practical experience during the last three years.—A. O. L.

FLORAL MIMICRY.

TO MAKE a list of the plants which in some way resemble others not in the least related to them would be a long task, but a few of these resemblances may be instanced here. Thus the resemblance between *Fabiana imbricata*, a Solanaceous plant, and some of the *Ericas* is so close as to deceive anyone at the first glance; so also a bush of *Colletia Benthiana* might readily pass for a clump of the *Iris*, *Furze* or *Gorse*. Or, again, why the *Salisburya*, a Conifer, should produce leaves like the pinnules of a gigantic Maiden-hair Fern is another puzzle. Even a good botanist might be excused if he thought that *Senecio macroglossus* was some kind of Ivy, so closely do their leaves resemble each other; and we have one South American *Calceolaria* (*fuchsifolia* or *deflexa*) which has leaves singularly like those of a *Fuchsia*, and might be mistaken for one when not in bloom. That some *Euphorbias*, when out of flower, can scarcely be distinguished from Cacti is a well-known fact. The milky sap of the *Euphorbias* is so different from the watery juices of the Cactus family, however, that a prick with a knife-point settles the question when one's eyesight fails to decide. Again, we have *Cycads* (*Stangeras*) resembling Ferns, while some of the Ferns and at least one *Pandanad* mimic the Palms in port and leafage. That the flowers of some plants, notably those of Orchids, bear some resemblance to spiders, birds, and insects, is an old story, and one which is well illustrated in the engraving. Among our native wildings we have the bee, spider, fly, and butterfly Orchids, to say nothing of our Lady's Slipper plant (*Cypripedium*) and that other terrestrial Orchid, the flowers of which resemble a lizard or newt in contour and markings. In the engraving we have the yellow *Cynoches* represented, and its likeness to a swan is not far to seek. There also is the tropical Butterfly Orchid with outspread wings and long antennae; so also a flower of the waxy-sepalled *Peristeria*, in the centre of which a little dove is formed by the column and the petals. There are *Brassia* flowers like long-legged green spiders, and a *Cypripedium* from Siberia has big pouched flowers, the lips and petals of which are singularly suggestive of an octopus as it propels itself through the water. Here also we note flower-spikes of *Pleurothallis* and *Dendrochilum*, the flowers of which are not unlike those of some tropical gnats or midges, so airily do they float in mid-air, suspended on the most dainty of hair-like stalks. Near the base of the illustration are shown some curious examples of the "leaf" and "dead stick" insects which Miss North has portrayed so well in some of her paintings of tropical life now to be seen in Kew Gardens. It is indeed wonderful how closely these living animals resemble things inanimate, so closely indeed that I have often been a little startled when I saw them move, just as I was once when I caught hold

of a harmless little green flower snake, thinking it was the stem of a *Nepenthes* of which the spotted pitchers were dangling overhead. No doubt this mimicry in the case of insects and animals is to some extent protective, inasmuch as it aids their concealment from their natural enemies, but why Orchid flowers should resemble insects, or why a *Groundsel* should try to look like Ivy, is a question perhaps not quite so easy of solution. F. W. B.

SEASONABLE WORK.

FLOWER GARDEN.

THE frosts have brought down the remainder of the leaves, a few Oaks excepted; therefore we shall now have a general clear up. The leaves will be saved; the best, *i.e.*, the driest Oak and Beech,

menaced till February, necessity often compels us to keep on all through the winter whenever the weather permits, and hitherto, by taking extra care not to allow the plants to be out of the ground longer than is absolutely necessary and staking and thickly mulching them as soon as planted, we have found winter planting to be just as successful as autumn or spring. With one exception only, *viz.*, *Hollies*, all kinds of trees and shrubs may be successfully transplanted throughout the winter. *Hollies* we have also done, but cannot recommend the practice, at least not as compared with plants moved during April and May.

PRUNING AND CLIPPING.—As with planting, so with pruning shrubs and cutting hedges, we are compelled to be heterodox, and do them whenever an opportunity occurs without reference to the season, and at the present time are busy clipping *Yew* screens, *Holly* and *Privet* hedges, and cutting straggling shoots of *Rhododendrons* that are growing under the shade of large trees that in such positions develop this kind of growth, and to keep them in anything like compact form they need such attention every year. Common and *Portugal Laurels* are being pruned into form, and upright-growing shrubs, such as *Junipers* and *Irish Yews*, are being drawn together with tar cord to prevent wind and snowstorms from breaking off any of the outside branches. Some few Conifers, especially the strongest-growing young plants, need to have some of the uppermost branches stopped and the points pinched out, that the plants may grow into a good shape. The leaders should be preserved from injury from birds perching on them by tying straight sticks to the stems, the top of which should be a foot or so above the top of the trees. The above constitutes the bulk of our outdoor work at the present time.

INDOORS.—There is much to do in the way of picking off the dead leaves of *Pelargoniums*, dusting *Verbenas* with sulphur to destroy mildew, and fumigating others that are attacked with green fly. *Violas*, *Gnaphaliums*, *Calceolarias*, and other kinds that are planted out in cold pits are being surfaced with *Cocoa fibre* for the double purpose of keeping out frost and rendering it unnecessary to water them for some weeks to come. Seeds of the following kinds of succulents, if sown now, will make good plants for next season: *Echeveria metallica*, *E. glauca metallica*, *E. secunda glauca*, *Sempervivum tabuleforme*, *S. canariense*, and *S. Donkelaari*. The propagation of other kinds by leaves or offsets may go on all through the winter.

FLORAL DECORATIONS.

THE weather being extremely mild of late, *Jasminum nudiflorum* has opened freely. Sprays of this handsome winter-flowering climber associate well with the dark bronzy foliage of *Berberis Aquifolium*. A few stray blooms of *China Roses* which continue to open are very useful at this end of the season. *Chrysanthemums* of all colours and sizes can now be had in abundance, and therefore they should be largely employed in floral arrangements for the next few weeks. After



A bunch of quaint flowers.

will be stacked for forcing purposes, and the remainder for rotting down into leaf-soil. Contrary to the general practice, we also clear out all the leaves from *Rhododendrons* and other shrubby clumps, for the simple reason that were they left we should be pestered with sweeping up whenever there was the least wind, and so we prefer to mulch the clumps as soon as cleared out with the mould from leaves stacked two or more years ago, and the plants that have been recently moved receive a treble portion by way of protection to their injured roots, and no doubt, also, the extra warmth thus assured aids new root formation. Advantage is taken of dry frosty mornings to wheel this material to the desired spots, and also to stack up fresh leaves, and to wheel manure and soil to plots that are being prepared for planting, as we have always some of this on hand; and though we would prefer to discontinue moving shrubs after December has com-

they are cut they absorb a quantity of water, a circumstance to which attention should be paid. The vases should be emptied and refilled at least twice a week. When this is done the stems should have a trifle cut off them, and then re-arranged. Some of the very finest flowers look well placed singly in specimen glasses, and the Pompones make good coat flowers with the addition of a leaf or two of scented or Oak-leaf Geranium. Occasional stray blooms from Tea-scented Roses in pots, Niphetos, or Madame Falcot in particular, make beautiful button-hole flowers, more attractive, if possible, at this season of the year than at any other. Of Bouvardias, two of the best and most durable for this work are Vreelandi (white) and Hogarth or elegans (scarlet). About three flowers of Calanthe vestita rosea carefully wired will make a handsome button-hole; so will one small spray of Euphorbia jacquiniæflora, with its own foliage, a small spike of white Roman Hyacinth being added thereto. Blossoms of Gardenia intermedia likewise make choice coat flowers, using its own foliage now instead of Fern fronds. For the drawing-room an effective arrangement may be made just now with the following subjects. Let us suppose the stand to be filled has one tall cornucopia, with three smaller ones as branches near the base. For the topmost glass use spikes of Salvia splendens and white Roman Hyacinth, with a fringe of Maiden-hair Fern and two or three rather long growths of Myrsiphyllum asparagoides trailing below. In the lower glasses place bunches of Violets or choice bits of Orchids, adding a few Fern fronds. Among plants that may be advantageously used just now in the house the following will be found serviceable, viz.: Pandanus Veitchi, small well-coloured plants of Crotons and Dracænas for the dinner-table, and Ficus elastica, Curculigo recurvata, and Dracæna rubra for the drawing-room or entrance hall. All these plants will stand well where gas is burned, taking ordinary precautions to change them every few days.

INDOOR PLANTS.

FERNS.—The adaptability for cutting which Ferns possess in a great measure depends upon the way in which they have been grown. Adiantum, such as A. cuneatum, A. gracillimum, A. trapeziforme, A. formosum, and A. farleyense, with the common and crested drooping forms of Pteris serrulata, are mostly in demand for cutting, but if these are grown under conditions of too much warmth and atmospheric moisture, with an insufficiency of light and air, they invariably flag when cut, a state, it is needless to say, that renders them useless. In growing these Ferns with a view to using them in a cut state, very little shade should be given, and none during the autumn and winter months, with no more moisture in the atmosphere than is consequent upon the evaporation of such water as percolates through the soil after watering, and from that which is unavoidably spilled about in the operation, plenty of air admitted daily and the plants kept well up to the glass. The favourite A. cuneatum in the London market is now much better liked when it possesses the pale greenish yellow shade, such as the half-matured fronds have, than when of a darker colour. This may usually be secured by subjecting the plants to quite cool treatment when the fronds are about half grown, which invariably has the effect of arresting their much further development, and in a great measure fixes the light tint. Previous to use, all Ferns should be cut and immersed overhead in water for several hours, the water thus absorbed doing much to prevent their flagging. Adiantum formosum is the best of the species for lasting long without drooping, and is very useful for mixing in the larger arrangements of flowers, such as vases, &c. The same may be said of the best large drooping-crested forms of Pteris serrulata, which in large stands have a fine effect. Plants of Adiantum that have been hard cut during the summer and have been induced to make growth late in the season should now have an abundance of air and be kept at an ordinary greenhouse temperature for some

weeks before the fronds are cut for use. It seems strange that the elegant Gleichenias, such as G. Speluncae, G. rupestris, and G. semi-vestita, are not more generally used for cutting, as there is nothing that can be mixed in this way with flowers that has a more beautiful effect, in addition to which they last for a long time when grown cool.

ÆCHMEAS AND BILLBERGIIAS.—The summer-flowering Billbergias and the nearly allied Æchmeas of the fulgens and miniata section, that usually commence growth as soon as they have done blooming, should be kept on growing through the winter, placing them at the warmest end of the stove, but at the same time keeping them well up to the glass. In their native countries these plants are mostly of an epiphytal character, growing on the stems and branches of trees where they necessarily get more light than if low down on the ground. To grow them so as to secure the full amount of flowers, the plants need plenty of light at all times. For general use they are best cultivated in small pots, with not more than two or three crowns in each; the bright coral-red branching flower-stems of A. fulgens and its allies, lasting as they do for several months, rank them amongst the best small plants for general cultivation where there is enough warmth to grow them well.

CYCLAMENS.—To insure as long a season for these as possible the plants should be divided and kept in two different temperatures; those that are flowering or fast approaching this condition produce the finest blooms when accommodated with the temperature of a warm greenhouse, say 45° to 50° by night and a little warmer in the day, but with this they should be kept well exposed to the light with air every day. Give particular attention to keeping down aphides, which, if allowed to remain undisturbed even for a short time, do irreparable mischief to the leaves and advancing flowers. Those that are intended to succeed the earliest blooming lot should be kept quite cool, so as to retard the expansion of the flowers as long as possible.

EPACRISES.—These, if grown in sufficient quantities and well managed, will be extremely useful, lasting individually for many weeks, and being equally adapted for cutting as for ordinary decoration on the plants. They will bear more warmth than Heaths, but unless where they are backward in blooming and flowers are required at once, it is better to keep them quite cool. Their time of flowering is best regulated by the way they are managed in respect to growth. Those that were late in completing and maturing their wood will come into bloom later as a matter of course. To still further retard those that are wanted to last until spring they should be kept as cool as consistent with the exclusion of frost; this they will bear without any injury, as a low temperature with them has not, as in the case of some plants, the effect of inducing the appearance of mildew. But Epacrises are very impatient of the least approach to over-watering, and never should have it applied until the soil has got so dry as to be dangerous if it is longer withheld.

EPIPHYLLUM TRUNCATUM.—Plants of this, although individually so effective when in bloom, are unfortunately not of long duration in the individual flowers; consequently it is not well to have many in at once. With this view only a few should be put into heat at a time at intervals of two or three weeks, and on no account should they be hurried on too fast, otherwise their fugative tendency will be increased; and with all soft textured flowers like these it is particularly essential that there is not too much moisture to the atmosphere of the house or pit where they are brought on into bloom. Large-flowered Epiphyllums and the Cactus family generally should at this season not be located in a cold, damp house, and care ought to be taken that the soil is not too moist; the condition best described as between slightly moist and quite dry suits them best when cool and at rest, otherwise the comparatively few roots which they make are liable to perish. These large-flowered species bloom naturally later than the truncatum section; neverthe-

less, they will bear forcing if required early, and with this intention, if there is any likelihood of a scarcity of flowers during the early months of the year, they may be put in heat and brought on slowly, being careful not to give much water at the roots until the heads of the plants have got into a plump condition, which they soon will through the moisture absorbed from the atmosphere of a forcing house.

MONOCHÆTUMS.—The comparatively short-lived nature of the flowers of these pretty plants is compensated for by the profusion in which they are produced. In a conservatory kept continuously above a greenhouse temperature they are particularly adapted for standing on side tables, brackets, or shelves, as when well managed in small pots—to which when confined they are most useful—they literally become a mass of flowers. Plants brought on in an intermediate warmth will do good service in a conservatory kept at a temperature such as above indicated, and for this purpose they should be forwarded in succession.

FRUIT.

EARLY STRAWBERRIES.—Where early fruit is wanted, the first batch of Vicomtesse Héricart de Thury or La Grosse Sucrée, an equally valuable variety, should now be under glass, as the plants must have an abundance of time allowed to enable them to throw up their scapes and perfect their flowers. If the Strawberry house proper is not ready, a spent Melon or Cucumber frame with a little latent heat in the bed and linings will answer very well for a time, provided they are kept well up to the glass and the roots are regularly attended with water. If worms have found their way into the pots, lose no time in dislodging them with lime water; examine the drainage, wash the pots, and top-dress with rich manure as they are placed in position. Many people plunge their plants or place them on a bed of fermenting material at the outset, but we have never felt quite satisfied with the plan, as the premature excitement of the roots induces a weakly growth of white fibres, which are injurious to the crowns, as they rob them of matter which should go to the formation of leaves and flowers. When the crowns of Strawberries, like the buds of Vines, are fairly on the move, then is the time to slightly stimulate the roots with genial warmth from fermenting materials.

PINES.—Maintain a bottom heat of 85° to 90° in the house where Smooth Cayennes and other winter kinds are now swelling their fruit. Keep them fairly moist at the roots until the fruit begins to change colour; then withhold water altogether, as too much is apt to produce black hearts at this dull season. When ripe the fruit may be cut, or the plants can be removed to a Muscat house, where Cayennes, Rothschilds, and Jamaicas will keep sound for several weeks if not wanted for immediate use. Late starters will require and repay all the attention that can be given to them, as they will come in at a time when English Pines are very scarce; and here again the sectional system of management will tell, as a light pit with a strong bottom heat of 90° and a top heat ranging from 70° at night to 80° by day will be the most suitable structure for keeping the fruit steadily progressing through the winter. Avoid wetting the fruit or allowing much water to accumulate in the axils of the lower leaves, but give just enough tepid liquid with the syringe to keep the stem roots moist and to throw up stimulating vapour from the surface of the bed in which they are plunged. Suckers that were potted in September will now be well rooted and in a fit state for resting through the dark, dull period now before us. If the bed has settled too far away from the glass, take advantage of a favourable day for introducing more partially spent tan or leaves, and replunge the pots up to the rims to reduce the necessity for frequent watering. Aim at a bottom heat of 75° to 80°, and a top heat of 55° to 58° when sharp firing is needed on cold nights. Give a little air on bright mornings when the glass ranges between 65° and 70°, and shut up with

sufficient atmospheric moisture to keep the plants steadily progressing in preference to allowing them to become stunted in their growth.

ORCHIDS.

EAST INDIA HOUSE.—We are now getting into the season of the year when great care is necessary to keep the plants in a healthy condition. We have evaporating troughs fixed in the house, but after this time of the year they are not used; we rather prefer to obtain all the moisture required from damping the paths and stages twice a day—in the morning and in the afternoon. Nothing need be said about re-potting or disturbing the roots of any of the occupants of this house at present. That is much better delayed until the days increase in length after Christmas, although there may be reasons for repotting isolated specimens even at this time. The spikes of all the popular species of *Phalænopsis*, such as *P. amabilis*, *P. grandiflora*, *P. Schilleriana*, *P. Stuartiana*, *P. violacea*, and others will now be pushing freely. See that they receive no injury in any way from drip. The cold water dripping into the centre of a valuable plant would do it much injury. If by no other means, the appearance of the plants will show where it is either by the extra green colour of the *Sphagnum* or by the wet state of the compost. Snails and slugs would soon injure the spikes if they were not captured by setting baits for them where they can be caught feeding at night and also early in the morning. Although *Phalænopsis* do not like to be exposed to the sun, they succeed best when suspended near the glass, and better in teak baskets than in the shallow pans in which they are also grown. *Angraecum sesquipedale* and others of this genus are also showing their flower-spikes. These also seem to do well in a shady part of the house, with the strong-growing species placed on the stages and the dwarf species suspended from the rafters in pans or baskets the same as the *Phalænopsis*; indeed, the treatment suitable to *Phalænopsis* is that best adapted to the dwarf *Angraecums*, such as *A. citratum*, *A. Ellisi*, &c. We had some *Angraecums* which have been a source of much trouble to us owing to their being infested with red thrips; this seems to be a distinct species, and is also very difficult to destroy. These Orchids seem to like a goodly supply of tepid water, and it must not be withheld now, as the plants seem to be pushing into growth in some cases. There is no difficulty at present in keeping the temperature up to 65° at night, but no one need be alarmed if the glass should drop to 5° less than this. The *Calanthes* that are not yet in flower may be pushed on in this house, but they will do in the *Cattleya* house temperature if this cannot be afforded them.

WORK DONE IN WEEK ENDING NOV. 25, 1884.

NOVEMBER 19.

FINISHED replanting in Rose garden, also of bulbs, &c., between them; afterwards over the whole sprinkled rather thickly Beeson's manure, a fertiliser that we have proved to be most excellent, certainly much superior to any guano we have ever used. The entire series of beds have been thickly mulched with Cocoa fibre refuse; well-rotted manure would have been preferable, but appearances have to be studied, and birds make such havoc with manurial mulchings, that they have to be dispensed with where neatness must be maintained; hence also the application of artificial manure prior to the mulching. Other Roses that we have growing together with Pears in the kitchen garden are now in process of transplantation, the ground being trenched and the Pear roots curtailed, particularly those that are getting a long way from home; all fine or fibrous roots are carefully preserved and are raised as near the surface as possible, and fresh additions of soil and manure consist of any spare loam or refuse Vine and Peach border soil and burnt ashes, such materials being placed near the Pears, and the Roses are given the best stable-yard manure we can get. This process is repeated every second or third year at the most, according as time can be spared for the work, the result being abundance

of good fruit and Roses in plenty, with plants usually free of mildew and other parasites. Work in the houses has been purely of a routine character—watering, cutting back the decayed parts of bedding plants that have started into growth; also bad flowers from *Primulas*, *Chrysanthemums*, and *Pelargoniums*, also the loose foliage from Vines where Grapes are still hanging. Frames containing *Violas*, *Calceolarias*, *Echeverias*, &c., are frequently picked over to remove Moss from the surface of the soil and every particle of decaying matter to prevent loss through damp.

NOVEMBER 20.

As yesterday, the principal work has been trenching for Roses and root-pruning Pears. More rain is sadly needed, the ground a few inches below the surface being dust dry, and it is to be feared that, ripe as the wood of fruit trees is and so full of fruit buds as all kinds are, such unusual dryness at root will prove disastrous to next year's crop; certainly this will be the case if the general theory in regard to indoor fruits holds good, viz., that lack of water is almost the sole cause of failure. With myself that is quite a settled opinion, and I shall act up to my belief by giving abundance of water to all trees possible, and to wall trees especially, hoping thereby to prevent some amount of loss. Many will no doubt envy us being so fortunate as to have more tree leaves than are needed for compost and other purposes, and therefore those containing most scraps of sticks, Acorns, Nuts and other refuse, and, therefore, of least service for composts, we burn, together with all old tree-roots and clippings of hedges. Two fires have been started to-day, as the charcoal is wanted for mixing with the materials for a new Vine border, and the finer ashes for mixing with the other soil as top dressings for fruit trees of every description. Work in the houses varies but little daily—tying second house of Peaches, untying trees from trellis in late house, preparatory to pruning and washing; potting up from the open ground a few more *Spiræas* for forcing; putting a few pots of *Lily of the Valley*, *Hyacinths*, and *Tulips* into heat are the more important doings of to-day.

NOVEMBER 21.

Very squally and a little rain. The latter is most acceptable, and will help our newly transplanted Roses and fruit trees to start into growth at once, and the wind is equally welcomed, for we want to see the leaves all down, that we may get the pleasure grounds tidy; then we can tackle other work, such as planting and alterations, with some degree of comfort, because there will be no hindrance, as is now the case, owing to there being more or less sweeping up of leaves to be done daily. Trenching in kitchen garden; pruning pyramidal Pears and cordons on walls; the latter require but very little, only here and there a long spur taken out; summer pinching of shoots is the best kind of pruning for these, as doubtless all would admit were they to see the trees bristling as they now are with well plumped-up fruit buds. The only thing necessary to keep cordons in a good bearing state is the application of rich top-dressings of manure twice a year, the first being given now, soon as the trees have been nailed or tied, and the other in early summer when the fruit is taking its first swelling. Turned manure for hot-beds and used with it more leaves, which makes the warmth more lasting. The heat in one or two of the Pine pits has declined greatly of late, and a heap has therefore been specially prepared for this purpose, consisting of two-thirds Oak leaves and the other of litter, and soon as well warmed through we shall hope to have a warm day to get it into the fruiting pits, else we shall certainly have badly-swelled and black-hearted fruit from want of a greater bottom-heat, which ought never to be less than 85° for winter fruiters, and for which season Smooth Cayennes and Charlotte Rothschilds are our favourite varieties. Work indoors has for the most part been of the same description as that of yesterday.

NOVEMBER 22.

The weather has been quite a contrast to that of yesterday—calm, with intervals of sunshine. Cleaned up and rolled the walks that are most used, and swept lawn near mansion. The outlying parts of ornamental grounds cannot possibly be kept in trim condition till the leaves have all fallen, and for the present, therefore, the paths only are kept cleared; these and the most important parts of coach roads occupied the whole of our outdoor hands the entire day. In the houses the usual weekly round of putting every place straight was done, and afterwards time was found to put in a few more *Chrysanthemum* cuttings and to cut down old plants that had done flowering, and rearranged the remainder to set the plants and flowers off to the best advantage. Turned over the fermenting material in early vinery and put in the house to force a few pot Roses and the white and yellow *Abutilons* that were lifted from the flower-beds. Usually these flower very well by Christmas and continue flowering throughout the spring months.

NOVEMBER 24.

To-day has been misty and very cold—a sort of day that is usually followed by severe frost, so that we took the precaution to cover up all Broccoli that are fit for use and dug up supplies of Parsnips and Jerusalem Artichokes. Saladings are not much in request with us, but the little we need of Lettuce and Endive is so arranged on south borders that covering can be applied in a few minutes, mats and Bracken being used for protecting both these and Cauliflower plants. Trenching Rose borders, and also in kitchen garden. Pruning Pears, also Raspberries. The latter are trained to stout wires running the entire length of the garden, and the canes are tied in oblique form at a distance of a foot from each other, all others being cut away. The ground is never disturbed nearer to the roots than a yard on each side of the fence, but thick surface coatings of manure are given now and again about the end of May. Potted Seakale roots and placed them on the floors of Pine stoves for forcing; the crowns are covered with the usual Seakale pots, and over these mats to prevent any tendency to the produce being green. Rhubarb we force in any out-of-the-way place where there is a little warmth, and the first roots have been put in to-day. Apples are plentiful, else earlier forcing would have been necessary. Finished tying Peaches in second house, and filled it with such kinds of bedding plants as do not require heat, or, at any rate, only a sufficiency to preserve them from frost. Pruning late Peaches; mixed up soil for top-dressing them, and also for making a new Peach border; loam, chalk, wood ashes, and a few half-inch bones are our mixture. We are still gathering Violets in quantity from the open ground; Marie Louise, double, and Queen Victoria, single, are our best kinds. Seedling Primroses—Dean's hybrid kinds—were sown in heat in February, and planted in the open borders early in the summer, are now flowering freely, and to-day have been covered with handlights, which possibly may help them to continue flowering for some time to come.

NOVEMBER 25.

Being a sharp frost, and therefore suitable for wheeling, our first job was to get manure on to vacant plots in kitchen garden, and the refuse-heap fires had more fuel put on in the shape of scraps of sticks, Cabbage stumps, grubbed-up roots, and, in fact, of anything that would burn and make ash and charcoal. Other work was much the same as yesterday—viz., mixing soil, trenching, and pruning Pears, Raspberries, and Currants. Looked over all Grapes and clipped out bad berries. Alnwick Seedling is not a late keeper, for it is badly shrivelled now, and yet Alicante in same house is plump as ever. Filled Grape room with fruit from an intermediate house that is wanted for plants; the sorts are Black Hamburg, Golden Queen, Alicante, Mrs. Pearson, and Gros Colmar; the latter has not finished well, the cause, I fancy, being that the Vines were partially

lifted last year, and the roots were, perhaps, cut back a little too hardly. Painting Peaches with Gishurst, tying and training the same to trellis, and protecting frames from frost with leaves and litter were amongst our doings to-day.

HANTS.

ORCHIDS.

ORCHIDS AT THE GLEN, LEWISHAM.

THERE are doubtless many owners of gardens, both large and small, who have a desire to grow Orchids, but are deterred from attempting their cultivation chiefly on account of the prevalent supposition that there is some mystery connected therewith, that it cannot be carried on except in specially constructed houses exclusively devoted to Orchids. Happily, this idea is now losing its hold, particularly in the case of owners of small gardens, who generally like to attempt to grow as much as they possibly can, even in their limited spaces. About London Orchid culture in small gardens is not only be-

of the Orchids, inasmuch as they maintain a moist atmosphere, and in the case of tall, robust-growing plants the small dwarf Orchids receive the necessary shade. Dr. Duke is particularly partial to fine-foliaged plants, and these, intermixed with the Orchids, produce a charming effect, especially when there is a good sprinkling of bloom. The houses, numbering some half-dozen, are, as has been said, small, and this smallness no doubt conduces in a large degree to the healthy growth of the plants. There is no greater mistake in the construction of Orchid houses than making them large, except in gardens where a special staff of skilled workmen is employed to attend to them. If, for instance, Dr. Duke had his plants in one or two large houses instead of in six, it is doubtful if he would be able to show such good results. Three or four of the houses are kept almost exclusively devoted to Orchids. Thus there is one solely occupied by Cattleyas, consisting of the various sections, and some exceptionally good varieties of *C. Trianae*, *Mendeli*, *Mossiae*, and others. Every available space in this house is occupied by plants. A high

though it is not one of the easiest to manage well. *Odontoglossums* of the *crispum*, *Pescatorei*, and other popular kinds have a long narrow house to themselves, which is cool and airy, though amply heated during severe weather. The ventilators at the top all open together by an ingenious contrivance, different from the ordinary way, and the front air at the bottom is admitted through a frame, also filled with plants, and of course heated from the house. There are some hundreds of strong healthy plants placed on a broad stage held as much up to the light as is practicable for watering them comfortably. Adjoining this is a tiny house, a sort of hospital where Orchids in declining health are placed so as to be under special treatment. This is a capital idea, which should be carried out in every Orchid collection. The smallness of the place is no doubt chiefly instrumental in recruiting the health of the plants, as the atmosphere can be adjusted to a nicety. Some of the Orchids seem, Dr. Duke says, to have a particular liking for this little house, and refuse to flourish in the others. Mexican Orchids, such as *Barkerias* and *Laelias*, are among those that thrive to perfec-



Warwick Priory: Tudor banqueting hall (see p. 453).

coming prevalent, but also thoroughly well understood, though often by force of circumstances carried out under adverse conditions. In this category may be classed the garden about to be described. It belongs to Dr. Duke, and lies in the thickly populated district of Lewisham, where the atmosphere is not always the most favourable for cultivating plants, whether in the open air or under glass. Dr. Duke's garden is but a small one, but it is a veritable *multum in parvo*, crammed, as it is, full of plants both hardy and tender. Orchids, however, monopolise the chief attention of both owner and gardener, and on the whole, both with regard to numbers and the health of the plants, the collection is highly creditable. Seldom have we seen Orchids grown to such perfection in small crowded houses mixed with other plants. It is rather unfortunate as regards the Orchids that Dr. Duke is so fond of all kinds of plants, for the latter, on account of their ranker growth, as a rule are liable to overcrowd the Orchids. Not that the latter are in any way harmed by them; on the contrary, their presence, Dr. Duke maintains, is conducive to the well-being

stage in the centre and others along the sides are crowded with specimens in robust health, and the roof also is profusely furnished with plants on blocks and in baskets. Dr. Duke is no advocate for shading; only when the sun is shining fiercely does he shade his Cattleyas; hence one finds plump and firm bulbs fully developed and ripened. Another house, small, snug, and moist, is occupied with the warmer Cattleyas, such as *Dowiana*, *Sanderiana*, *superba*, also by *Phalenopsis* and the warm house *Odontoglossums*. Of *Peristeria elata*, the Dove Plant, there is an uncommonly fine specimen which evidently revels in such a house as this; it is in company with Pitcher Plants (*Nepenthes*) and similar plants. Over head at the end are large plants of the shrubby *Hibiscus Rosa sinensis*, a particular favourite here. This is grown in several varieties with different coloured flowers, crimson, salmon, red, and one almost an orange. Suspended from the roof were some plants of *Scuticaria Steeli* with undamaged leaves fully a yard in length. These were beautifully in flower and very handsome they were. It is one of the choicest Orchids which an amateur can grow,

tion in it. A proof of this was afforded at the time of our visit, when there was a plant of *Barkeria Lindleyana* carrying over sixty flowers upon about half a dozen spikes. Orchid growers, knowing how difficult to manage the *Barkerias* are, will appreciate this fact. Another little house is devoted entirely to tiny plants of *Odontoglossum* just imported. An excellent plan we saw here of keeping off slugs was surrounding the stages with a trough of water, which not only keeps off the slugs, but maintains a moist atmosphere in the house.

The last house we entered was the principal one, devoted, as we before observed, to a mixture of Orchids and stove plants. It is span-roofed and divided into two parts, so that the temperature may be varied. An indescribable heterogeneous mixture is grown in this house, and kinds which are generally considered to require diverse treatment are growing together in the happiest way possible. Cattleyas, *Dendrobiums*, *Cypripediums*, *Odontoglossums*, *Phalenopsis*, and *Masdevallias* among Orchids, for instance, may be seen in excellent health. Overhead run creepers, such as *Lapagerias*, *Ipomæa Horsfalliae*, *Fuchsias*, *Abuti-*

lons, and these afford the necessary shade except in very bright weather. Even at this dull season this house was quite gay with bloom; various *Odontoglossums* were in full flower, surpassing all, being some finely blossomed specimens of the noble *O. grande* which is grown to perfection here, the plants having large, plump bulbs, producing stout spikes of huge flowers some 4 inches and 5 inches across. Among flowering *Dendrobiums* were *D. bigibbum*, the new *D. leucolophotum*, a white-flowered species in the way of *D. barbatum*, *D. formosum giganteum*, and the Australian *D. Tattonianum*, which is singular, but not very showy. Among *Cattleyas*, the most notable were the rarely-seen *C. luteola*, an interesting if not a very showy species. It has smallish flowers of a greenish yellow colour. In fine flower also was the dwarf *C. Walkeriana*, which is grown admirably in this house in suspended baskets. A fine specimen of *C. gigas formosa* was producing a second crop of bloom—a remarkable circumstance. The flowers are very large and of a delicate shade of rose-pink. The lovely white *Pilumna fragrans* and the larger variety *nobilis* quite filled the house with their delightful fragrance, mingling with that of other kinds. *Paphinia cristata* was also nicely in bloom; it is grown in suspended pans close beneath the roof in the same manner as *Sophranitis grandiflora*, of which there is a long row of healthy tufts. These in the flowering season must present a beautiful sight. Other noteworthy Orchids that Dr. Duke is successful in growing in this house include *Laelia harpophylla* and *L. flava*; *Dendrobium pulchellum*, a fine mass of which seems to enjoy its quarters close beneath the glass; *Leptotes bicolor*, beautifully in bloom; *Oncidium Papilio*, *Aerides Rohanianum*, showing a flowering spike; and *Epidendrum rhizophorum*, one of the brightest of the genus, but rather a rambling grower. The *Phalænopsids* find a snug shelf in one corner of the inner compartment, and where they do amazingly well; indeed, one plant of *P. Schilleriana*, having four breaks with leaves a foot or more in length, would be difficult to match for size or health. *P. Sanderiana* was in flower, but a very pale form, almost white, and not nearly so beautiful as others we have seen of this new species. The dull weather, however, may account for the absence of colour. *P. Stuartiana*, *amabilis*, *grandiflora*, all succeed well, and the little *P. rosea* has, which has been in bloom for months, expanded no fewer than fifty flowers on one spike. Among the other plants we particularly noted some fine specimens of the true *Tillandsia Lindenii*, one of the loveliest of the *Bromeliads*; *Toxicophylla spectabilis*, an *Ixora*-like shrub with clusters of white, sweet-scented flowers; and, strange to say, the little Chilean *Sarmienta repens* was also growing beautifully in company with the foregoing plants. There is every promise of a fine show of winter bloom in Dr. Duke's houses, judging by the flower-spikes of *Lælias*, *Cattleyas*, *Odontoglossums*, and other genera that are daily showing themselves.

Lycaste Skinneri.—Mr. Vicary sends from Mr. Peacock's garden at Sudbury House, Hammersmith, one of the richest-coloured forms of this Orchid that we have seen. Its flowers are not particularly large, but they are very handsome; the sepals are of a very pale blush, and the petals of the richest carmine-crimson, as is also the upper surface of the labellum. Of the enormous number of plants of this *Lycaste* grown by Mr. Peacock, few will compare with that under notice.

Dendrobium formosum giganteum.—A truly gigantic flower of this *Dendrobium* has been sent to us by Mr. Thomson, of Clovenfords. It measures over 4 inches across and the petals are proportionate in size, thus forming a flower symmetrical in outline. The colour is snow white, save the yellow dash on the lip; the thick texture of the flower gives it the appearance of being moulded in wax. Mr. Thomson also sends a bloom of the white *Lælia elegans*, a lovely variety—the queen of November Orchids.

Odontoglossum adspersum.—This novel variety, which flowered in this country for the first time last year, is now flowering in Messrs. Shuttleworth & Carder's nursery, Clapham. It is a beautiful Orchid; the colours of the flowers are not only showy, but soft, and blend harmoniously. The flowers are the exact counterpart of those of *O. Rossi majus*; indeed, this

variety is already known as a form of that variety under the name of *areum*. The heart-shaped labellum is white; the lateral sepals half canary-yellow, half mottled with chestnut-brown, a colour which forms the ground of the other three sepals. It has been suggested that this is a cross between *O. Rossi majus* and *O. cordatum*. It is grown successfully by Mr. Shuttleworth in suspended pans.

Dendrobium taurinum.—Mr. Scott sends from his garden at Ashfield House, Belfast, a spike of this strange-looking *Dendrobium*, which, though introduced over forty years ago by Messrs. Loddiges, is still rarely met with. The flowers are more curious than beautiful, the twisted sepals having some resemblance to a bull's horns; hence the specific name. The flowers measure about 2 inches across, the colour of the sepals being a yellowish green, while that of the much longer petals is suffused with purple. The stems are slender and are said to grow 5 feet long. It is a native of Manilla. This is the first time it has flowered with Mr. Scott. Accompanying this spike was a fine example of a very deep form of *Lælia autumnalis atro-rubens*.

Cymbidium elegans.—Of this extremely rare species of Orchid a fine flower-spike has been sent to us by Dr. Paterson, of Fernfield, Bridge of Allan, who seems to manage the culture of this Orchid with as much success as that of the rest of his collection. This is not what one would call a very attractive species, though very curious and quite distinct from others of the genus in gardens. The spike measures about 18 inches in length, and for about a foot from the tip it is densely covered with flowers of a yellowish white tint. The blossoms do not fully expand, otherwise the spike would be more showy. The growth is much the same as that of *C. Mastersii*. This species has only, we believe, flowered a few times in this country, and many experienced orchidists about London have not seen it in bloom. It is a native of Northern India, among other districts about Khasia and Darjeeling.

Orchids from France.—I send you a couple of flowers of a *Vanda coerules* which has flowered this autumn with me in a most surprising manner, having yielded two spikes, one bearing seventeen flowers and the other fifteen flowers (thirty-two flowers in all), the plants being only 2½ feet high. I have grown it in the *Cattleya* house all summer. I send also a couple of flowers from a fine plant of the rare *Oncidium incurvum album*, which is showing three spikes, one of which is 2 yards long at present; a plant of *Calanthe Veitchii* has produced a spike bearing forty-six flowers; I have one other as deeply coloured. [A very highly coloured form.] I have a fine *O. nevadense* in bloom, with a spike of eleven flowers, and *Masdevallia ignea Eckhardtii*; the fine dark one of which I sent you a flower last spring is bearing six grand flowers.—HOWARD H. CHESHIRE (Jardinier-en-chef), Rue de Havre, St. Adresse.

PARKS & PUBLIC GARDENS.

AT a recent meeting of the Metropolitan Public Garden, Boulevard, and Playground Association, the secretary reported much work as having been undertaken and accomplished during the past month. Several letters have been written to the press and public bodies, including protests against illegal building operations upon certain disused burial grounds. Grants of money were voted for the laying out as a public garden of the churchyard of St. Bartholomew, Bethnal Green, the opening of the ground surrounding Christ Church, Battersea, the formation of a gymnasium at Stepney, and the further improvement of Canonbury Square. Letters were ordered to be written to the proper authorities concerning a proposed cricket ground in Kensington Gardens, the utilisation of the main drainage embankment, and the planting of trees in the Brompton Road. The opening to the public of the gardens of Blackfriars Bridge, which have been tastefully laid out by the corporation, was announced, and the conversion

of the disused burial-ground, Benjamin Street, E.C., into a public garden was to be immediately proceeded with.

ROYAL HORTICULTURAL SOCIETY.

Scientific committee.—Mr. Loder in the chair.

Weevils attacking Orchids.—Mr. Pascoe exhibited specimens of *Acythopeus*, n.sp., from Borneo and elsewhere in East Indies, imported with the Orchids which they attacked.

Orchids, photograph of.—Mr. Smea exhibited photographs of Orchids as growing during the summer out of doors. They were taken into the house in October. Several had flowered during the three months they were out.

Knot in Birch.—Mr. McLachlan showed solid woody knots, apparently embryo buds, of 1 inch to 1½ inches in diameter. Also specimens of a cockroach (*Periplaneta americana*) occurring at Kew, in the Palm stove, received from Mr. Dyer.

Masdevallia leaves diseased.—Mr. Smith showed specimens badly infested with *Protomyces con-comitans* growing in the intercellular spaces. Mr. Boscawen thought it might have been attacked by a thrips. Mr. Smith had not observed any. Mr. McLachlan remarked that *Portschinsky* said that thrips only attacked unhealthy plants, but could not assent to the statement.

Lilium auratum bulbiferous.—Mr. Wilson brought stems of this Lily provided with aerial bulbs like the bulbiferous section. He remarked that *L. longifolium* often bears them. He stated that the frosts of April cut down the young stems of *L. speciosum*, but the bulbs left in the ground appeared to be larger, with bulbils also in some cases, notwithstanding the foliage being uninformed.

Experiments at Chiswick to test the Jensenian moulding of Potatoes.—The report was sent by Dr. M. T. Masters, embodying the results of experiments carried out under the superintendence of the sub-committee. The chief conclusions arrived at were as follows: 1. Earthing up increases the period of vegetation and amount of produce; "except in one instance (whole tubers, bent tops, Adirondack), the produce of the sections earthed up for the longest period is markedly in excess of that yielded by the sections earthed up for the shortest time." It may be also observed that tubers not earthed up at all (control rows) yielded the largest quantity, but the worst in quality and most liable to disease. 2. Bending the haulm reduces the produce, but conclusions from these experiments cannot be accurately deduced, "nor is it practicable to dissociate the effects of the bending from those of earthing up." [Mr. Plowright observes that bending should not be done while the Potatoes are in blossom, but before July 15, and after 23rd no deterioration of the tubers occurred in experiments in Holland.] Moreover, the bending the tops is practically almost impossible from the quantity of foliage and the quick recovery of position. 3. The effect of cutting the tubers is shown in a marked deficiency of produce compared with the result from using whole tubers, there being a difference of about 10 lbs. in favour of whole tubers of Recorder and of 12 lbs. in the case of Adirondack. 4. Amount of disease. So trifling has been the attacks of *Peronospora*, that, as far as any results could be obtained to test the Jensenian method of moulding, they are practically nil. Many Potatoes were, however, characterised by the reddish spots dispersed through the tuber, the cause of which is at present inexplicable. Tubers thus affected are called "suspects" in the report. The true Potato disease was almost exclusively confined to Recorder and to tubers earthed up a proportionately short time. In the control rows, however, both varieties were affected. It was moved by Mr. Grote and seconded by the Hon. and Rev. Mr. Boscawen that the same sub-committee be instructed to carry out a repetition of the experiments at Chiswick in 1885 to test the Jensenian method of protecting Potatoes from the attacks of *Phytophthora*.

Potato diseases.—A communication was read from Mr. Plowright, which the following is an abstract. The chief diseased conditions are: A, diseased conditions arising from causes affecting the growth of the plant itself: 1, green tubers; 2, hollow tubers; 3, supertuberation. B, diseased conditions arising from causes external to the plants: 1, the Potato disease (Phytophthora infestans); 2, wet rot (Bacillus amylobacter, Van Leigh); 3, dry rot; 4, scab; 5, spotting or mottling. Passing over A (1) as unimportant, the author observes that hollow tubers are a reversion to the normal state of aerial stems. The cells bordering the cavity have no starch, and are suberised. Tubers diseased by Phytophthora are characterised by being first affected on the surface, as Kûln pointed out in 1859, as the zoospores attack it through the epidermis. The author quotes the view that the mycelium penetrates the tuber by the haulm, a view held in this country, but not on the Continent, and he remarks that the former view is proved by experiments, whereas the latter has not been experimentally tested, except that when cotton wool is wrapped round a portion of the stem, and all the rest artificially infected with the disease, the protected part alone remains entirely free from mycelium. The deep brown and opaque places are not diffused, but harder and drier than the rest. The cultivation of the fungus is easy, but it soon loses the power to produce conidia. The browning appears in two days at a temperature of 75°, but after longer periods with lower temperatures. **Wet rot.**—Potatoes diseased with this decay in pits and in ground. It is caused by Bacillus amylobacter. This microbe attacks the cell-walls. It is very infectious. To cultivate Phytophthora without the Bacillus it is necessary to desiccate the slices charged with the former, as the latter then dies, or is quiescent. **Dry rot.**—This occurred to a great extent in Germany in 1830, and has been common there ever since 1842. The Potato is dead-looking, and has brownish or bluish spots within; in old stages the interior is a mass of yellowish white and friable substance. It has not been noticed to any extent in England. **Scab.**—This is unimportant. The cause appears to be unknown, but the author is inclined to think it is an effort to form cork to prevent the entrance of fungi.

Spotted and mottled tubers.—These spots differ from those due to Phytophthora—1. Being inside the tubers. 2. They are neither so opaque nor so dry nor deep in colour. No trace of a mycelium was to be found, and no conidia could be obtained by cultivation by De Bary, Rostrap, Jensen, Plowright, Murray, or Henslow. Mr. Jensen suggested it might be an incipient stage of dry rot, but Kûln negatives this view. Mr. Plowright adds that a crop was unsaleable this season, as it cannot be foretold how many tubers may not be attacked. Mr. Plowright also forwarded specimens of tubers—1. Diseased by Phytophthora through the epidermis. 2. Mottled. 3. Wet rot as it occurs naturally with Phytophthora. 4. Artificially induced on sound tubers. 5. Spicaria Solani. 6. Acrostalagmus cinnabarinus. He also sent copies of Rencke and Berthhold's figures of Bacteria, showing starch grains in the process of dissolution of Bacillus amylobacter. With reference to Mr. Plowright's statement, that mycelium was not found in the part protected by cotton wool, Mr. W. G. Smith reported that he had carefully examined the experimental specimens forwarded to the last meeting, and had found mycelium throughout the stem quite as much under the wool as elsewhere. Mr. Plowright alluded to Mr. Murray's experience in getting the mycelium to penetrate the tough skin of Champions as corroborating De Bary's statement. Mr. Murray said that it was only in the case of about three or four tubers out of 100 that succeeded, but that he had repeatedly traced the mycelium down the haulm along the subterranean branches and into the tubers.

Potato sclerotia.—Mr. W. G. Smith had carefully isolated these bodies on a slide, and treated them with nitric acid, which destroyed a coat of calcium oxalate, and revealed an oval plasmic

body exactly as Mr. Wilson has done, as reported below. He had found similar bodies with P. Schleideniana in Onions and P. nivea in Parsley. Mr. Murray said he had found similar bodies in perfectly healthy plants, and suggested that Mr. Wilson should repeat his experiments, and that he would test Mr. Wilson's. Mr. Bennett raised the question whether malate of lime might not be present, as malic acid was particularly abundant in vegetables.

The Potato disease.—A communication was read from Mr. A. Stephen Wilson on the so-called sclerotia found in the foliage of Potatoes. After referring to the history of them, and to the negative results of Mr. Murray and Dr. Flight, who regarded them as calcium oxalate, and not living bodies, he considers those observers as acting under a misconception, in that they attempted to make a parasite grow in dead matter. Hence Mr. Wilson traced the results of "myceliation" while the tissue was living, and found that the granules of the spherical bodies contained within the coating of lime threw up a complete crop of Peronospora in a night's time. He gives a description of his experiments with nitric acid, which, by careful application, dissolves the lime, but leaves a pellucid ball of granular plasm behind. "This is everywhere permeated by sporadic granules, some of a round form, others of an oblong form, like short pieces of excessively delicate mycelium. The whole has a soft hue, like fine pencilling, and the outline is in most places perfectly definitive, with here and there a break, as if part of the material has flowed out at the side." . . . "A conidium of P. infestans is about half the size of one of these bodies, and the contents of the conidium are optically very similar to those of the sclerotium as seen after being divested of its calcareous coating, and both equally give rise to mycelium."

The author then gives measurements, and observes that other plasmodiating fungi are coated with lime, as some of the Myxomycetes.

Sparmannia and Hoya roots clubbing.—Mr. Plowright sent specimens, which were referred to Mr. Smith and Mr. McLachlan for examination and report.

THE GARDEN ANNUAL FOR 1885.

GREAT pains have been taken to make this very complete in all ways this year. We believe it to be the most correct and full directory of British gardens, their proprietors, the nursery and seed trades, and gardeners, that can be produced in such a simple way. Of course there are critics of such things who do not remember that there is such a thing as a death rate; that places change hands, or are not occupied, and that people also change their gardeners—some with unfortunate frequency. But all who do not quite forget these facts and the other difficulties of such an undertaking will confess that "The Garden Annual" fulfils a want in a satisfactory way. The features we most refer to in this notice are:—

An alphabetical list of nurserymen and seedsmen, florists, horticultural builders, engineers, and of the horticultural trade generally.

The principal gardens and country seats in Great Britain and Ireland, arranged in the order of counties, extended and corrected to date.

Alphabetical list of country seats and gardens in the United Kingdom, with names of their owners, very much extended and corrected to date.

Alphabetical list of head gardeners in the principal gardens of the United Kingdom, rewritten with nearest post towns added. This list has been augmented by nearly 800 names and addresses.

French name for Daisy.—I feel sure that Mr. Irwin Lynch will not mind my correcting a slight error in his very interesting paper on the genus Chrysanthemum (p. 440). He there says that the only French word for Daisy is Marguerite. This is true of the large Daisies (Marguerites-pleines), but for the common Daisy (Bellis perennis) the word Pâquerette is more usual. The

word itself is interesting, and I have often thought it more likely to be the origin of our Pasque Flower (Anemone Pulsatilla) than is Pascha (French, Pâque), Easter. It is derived from the old French word *pasquet* (which in its turn comes from the Latin *pasceum*), and thus means literally "the meadow flower."—G. H. WOLLASTON, 24, College Road, Clifton, Bristol.

Round-leaved Laurel.—As this is the time for transplanting Evergreens, I feel inclined to say that I have found the round-leaved Laurel to be so superior in every way to the old sort, that I wonder anyone who is acquainted with the difference should now plant any of the old kind, as the former is better shaped in leaf and plant, better in colour, more compact, and hardier, so I am discarding all the old sorts for this. I know it is not the only sort, as the narrow, dark-leaved Caucasian is worth growing, so is a very large-leaved one, the name of which I do not know. The last severe winter all the common Laurels were cut down in many low places, but the round-leaved has never been affected with me at an elevation of 600 feet for the last five years in which I have grown it, so I feel full confidence in this recommendation.—H. RICHARDSON, Cherry Bank, Ilkley.

LATE NOTES.

Open-air Dahlias (J. C. Land).—Excellent blooms for so late in the season.

Fungus (E. H. S., Bodmin).—The name of the fungus is Phallus impudicus, sometimes called from its horrible effluvia the "stinking polecat." The specimens should be sought for and burnt, as this fungus is at times an intolerable nuisance in gardens.—W. G. S.

A fine climbing Rose.—Longworth Rambler is an excellent American climbing Rose with bright crimson flowers and very pretty buds. It is the only Rose now in fair bloom in Canon Hole's collection. It is a free grower and appears to be very hardy.

Chrysanthemums (D. Dorward).—Very good blooms. The sorts you send are Queen of England, pink; Fair Maid of Guernsey, white Japanese; George Glenny, yellow; Mrs. George Rundell, white; Prince Alfred, purple. The others we do not recognise.

Various (J. T.).—Emerald Gem or Dillstone's Prolific are good early Peas. Three of the best large Gooseberries are London (red), Leveller (yellow), and Thumper (green); if you want flavour, you must seek it amongst the smaller sorts. Of Currants, select Knight's Large Red and White Dutch.

Walnuts.—What is the name of the Walnut tree that bears the very large sized fruit, and the one bearing large and very thin-skinned fruit? The former, I think, is called Juglans gigantea, and I have heard the latter called the High Flyer, but nurserymen do not know them by these or any other names.—H.

* * The very large-fruited Walnut is Juglans regia var. macrocarpa; the very large thin-shelled form is J. regia membranacea, the *Noix meringue* of the French nurseries.—ED.

Chrysanthemum W. Robinson.—Very large blooms of this superb Chrysanthemum have been sent to us lately by Mr. May, gardener, Northaw House, Barnet. This variety was figured in THE GARDEN last year, but nothing can do justice to its fine and distinct new colour. The size and habit, too, seem remarkable. It will have a great decorative value as a cut flower.

King of the Pippins.—The state in which the taste of our Apple-growers is may be estimated from the fact that in the list of 120 Apples selected the greatest number of times in the Apple Congress report this stands first, while it is one of the hardest, poorest, and most deceptive Apples we know. It illustrates well the humbug of our pomology, in which far too much is sacrificed to looks.

Carnation (M.).—The bloom sent is very pretty, a rich magenta-purple. If it is a dwarf-habited plant, and flowers well in the autumn or winter, it would be worth growing; but the flower is very small and not of good form. There are now some really good dwarf forms of perpetual-flowering Carnations bright and varied in colour, and unless new varieties are dwarf and floriferous, there is no room for them unless the flowers are of exceptionally good quality.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—W. H.—1, Cannabis sativa (Hemp); 2, Arbutus Unedo; 3, Rhus Cotinus; 4, Crataegus Pyracantha; 5, Cotoneaster Simonsi.—Mrs. M. A.—Cotoneaster Simonsi.—G. H.—Oncidium pulvinatum.—W. H. R.—Datura sanguinea.—F. E.—Next week.—J. George.—We do not attempt to name Chrysanthemums or other florists' flowers.—Balmoral.—Appears to be the variety Homère, but we cannot be certain, as the petals had dropped when the flower reached us.—J. R.—We cannot name your Camellia.—E. F. C.—Common Reed (Phragmites communis).—J. Pratt.—Odontoglossum (Grandes).—E. J. H.—Please send larger and better specimens.

No. 681. SATURDAY, Dec. 6, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare*.

CHRYSANTHEMUMS IN VASES.

THAT all the finest Chrysanthemums grown about London do not find their way to exhibitions is evident from the fact that we received finer blooms of some sorts from Mr. May, the gardener at Northaw House, Barnet, than we have seen at any show this year. He has sent us by far the finest gathering of these flowers that has yet reached us. The great blooms of the incurved sorts were not so faultlessly globular as one sees them on exhibition stands, a ruffled petal here and there just serving to obviate monotony. Then, again, the Japanese sorts, with their long dishevelled florets twisting in all directions, looked much handsomer and more picturesque than when spread out formally on a board, as is customary at exhibitions. This gathering of blooms, cut with long stalks and with foliage sufficient to set off the colours of the flowers to advantage, had a charming effect arranged in tall vases and grouped according to their tints. It is greatly to be wished that some encouragement was given to exhibitors at shows to thus display their blooms. Then the true beauty of the Chrysanthemum—that of form in the incurved and picturesqueness in the Japanese race—could be seen and appreciated, instead of huddling the blooms close together on a board without foliage, or anything else, to set off their colours in the best way. It is not, however, for exhibition alone that Chrysanthemums are grown. Many drawing-rooms, boudoirs, and halls have during the past month been beautified by them, and in most cases they have been displayed with plenty of stalk and healthy foliage—the proper mode of arranging them. Charming combinations may also be effected by intermixing the decaying leafage of deciduous trees with some of the brighter coloured Chrysanthemums. Examples of this style of arrangement were sent to us lately by Miss Jekyll, who, we scarcely need add, knows thoroughly how to deal with such matters. The chief fault to be found with the ordinary way of arranging Chrysanthemums is that no regard is paid to harmony of colour. There is certainly no class of flowers in which so much diversity of tint is to be found as in the present race of Chrysanthemums, and equally certain is it that no flowers possess such subtle shades forming an uninterrupted gradation between two extremes. For instance, from yellows one may pick out tints that will form a chain of shades up to the deepest crimson, such as that of the beautiful Julie Lagravère. In the series of varieties sent by Mr. May, all these variations exist. The Japanese sorts number between twenty and thirty, and nearly as numerous are the incurved sorts. A selection of the finest of this gathering includes, among Japanese sorts, Boule d'Or, Fair Maid of Guernsey, Hiver Fleur, Elaine, Bouquet Fait, Triomphe de la rue du Châtelet, Mons. Ardene, Criterion, Meg Merrilies, one of the latest, and the new variety raised by Mr. May and named W. Robinson. This is a beautiful sort, having large shaggy heads of long florets of a warm shade of chestnut-brown. It originated as a sport from Bouquet Fait two

years ago. It occurred as a solitary bloom on a branch, and being bronzy instead of rosy pink, the shoot was taken off and rooted, the result being the present excellent variety, which is to be sent out by Messrs. Veitch. The incurved sorts sent are of the ordinary stamp, but all are perfection as regards growth, and among the Anemone-flowered race are some blooms of the white Lady Margaret nearly 5 inches across. This snow-white sort, associated with the maroon-crimson Julie Lagravère, a pale yellow, and the bronzy Barbara, made a beautiful vaseful—a fit ornament for any table.

SINGLE CHRYSANTHEMUMS.

PRETTY as many of these undoubtedly are, and likely in all probability to be popular for a season or two, yet I do not think they will become favourites for any length of time. The danger to the popularity of the single Chrysanthemums arises from the fact that efforts to improve them in the way of raising new varieties result in much the same as we have seen in the case of single Dahlias—the flowers become larger in size, ungainly in appearance, and coarse in character. This occurred in the case of some of the new American varieties produced by Messrs. H. Cannell at the last meeting of the Royal Horticultural Society; they were large and coarse, and altogether wanting in that refinement which is to be seen in many of the pretty pomponé varieties.

Let us pass in review a few of the American importations. There was W. A. Harris, which looks like a single form of Peter the Great, pale yellow in colour, large and loose in appearance; Kate Henderson, with white petals broadly margined with pink, pretty and attractive; Peter Henderson, with surface reddish dark brown, the yellow reverse, slightly tinted with red. These may be taken as representatives of the American productions, but we scarcely think that they are likely to be greatly approved of by the English flower-loving public. Other new single-flowered varieties were Sidonia, dark pink surface and rosy purple reverse, but having four rows of marginal petals; Magenta King, rich deep magenta, bright and showy, one of the best; and Mr. Wells, rosy magenta, large and showy, but a little loose-looking. There is quite a long list of American varieties, single and semi-double, but only the few named above were seen on this occasion. A few of the single forms are undoubtedly pretty, but we can scarcely think there is a future before them. At the meeting of the National Chrysanthemum Society, at the Royal Aquarium, Mr. H. Ware set up a stand of small-flowered single varieties, more like single Helichrysms than anything else, but they did not appear to find much favour. One thing is certain, the committee of the National Society did not provide classes for them at the recent exhibition at the Royal Aquarium.

The interest created in these single Chrysanthemums may perhaps have a tendency to encourage the production of seedlings in this country; not, of course, from English saved seed, but from seed obtained from the Continent or the Channel Islands. A few days since I saw an extremely interesting batch of seedlings raised from seed sown in a gentle heat in January last, and planted out in the open ground in early summer, care having been taken in the meantime to grow them on into as large a size as possible before doing so. As the plants were carefully looked after when planted out, they soon grew into size, and in October every one flowered out of a considerable number of plants. These were large-flowered Japanese, pomponé, Anemone-flowered, and single varieties, very few inferior, and all of an interesting character; really they were annuals and not biennials, as might have been expected. No doubt the season was favourable to the development of the plants, and perhaps it is only the accident of such a dry, warm summer as that of the present year that could have produced flowering plants from seed in ten months. The narration

of these facts may induce others to attempt to raise seedlings. Let us hope it will have that effect.

R. D.

An avenue of Michaelmas Daisies.—

I was never so much impressed with the beauty of these plants to produce effects as the other day, when, after travelling for some hours over fields and ditches, I came upon a farmhouse standing back about 30 yards from the entrance gate. On either side of the pathway leading up to the front door was a row of large bushes, about 4 feet high and as much through and just touching each other, of one of the best sorts of Michaelmas Daisies. I do not know the Asters well enough to give the species or variety a name. The flowers, however, were large and bright blue in colour, much like A. Amellus. The shoots were not tied up at all; some of the stems stood erect, others bent over, and some laid upon the Grass, all being covered entirely with flowers just at their very best—a veritable avenue of blue, and just about the last thing one would have thought of to plant an avenue with.—T. SMITH, *Newry*.

The seedling Gladioli of French origin as of ordinary home growth, are as short-lived under ordinary culture as they are beautiful when really well grown. True, we have now a new race—those of the G. purpureo-auratus section, which are perfectly hardy, and which instead of dying out actually luxuriate and increase rapidly on warm, dry soils. Planted out under a sunny wall, The Bride variety flowers here most copiously in May and June, or in pots we may have it in flower by the end of April, and if well grown but few white blossoms are more elegant or acceptable. So also the varieties of G. ramosus bloom in May and June along with the latest Narcissi, and add colour and variety to the summer beauty of the best of gardens, but the fact remains that we have twenty or thirty species, perhaps more, of Gladioli known in books and herbaria which are rarely if ever seen in even the best of gardens. Is it too much to ask some well-to-do amateur to do for the Gladiolus what Mr. Maw is doing for the Crocus, and what Mr. Elwes has done for the Lily Queen?—F. W. B.

Gladiolus Ville de Versailles.—Some day we shall have people fond of gardens and gardening fall in love with the Sword-flower, just as, in times past, they loved the Tulip and the Fig Marigold, and as now they offer their allegiance to the painted Orchid or the golden Daffodil. True, even now we have our Kelways and Souchets as masters in the art of Gladiolus culture, so far as seedling varieties are concerned; but we want admirers of a broader taste, who will grow all the old Cape species as well as the seedlings of modern origin and nomenclature. To turn over some of the older volumes of Curtis' "Botanical Magazine" is like a dream to anyone fond of Gladioli; but how few of those therein portrayed are known in our gardens of to-day. From the soft, warm May days until now the Sword-flower has given us bright glints of colour; from the time the pale "Bride" (G. Colvillei albus) opens its paper-white buds until G. Ville de Versailles opens its pale, blood-spotted blossoms to a wintry sun. In a word, from May to November the Sword-flower may be had in bloom.—F. W. B.

Justicia speciosa.—Where flowering plants are required in quantity for decorative purposes this Justicia is especially valuable, as it is a plant of the easiest culture, and is just now thickly covered with bloom of a pleasing shade of light purple, blotched on the upper part with the same colour. Though individually the flowers do not remain long in perfection, yet they are produced in such numbers, that by means of them the plant is rendered effective for weeks together. It makes a good companion to winter-flowering Salvias, and supplies a tint which is, as far as I am aware, unrepresented among them. Cuttings made of the young shoots strike root in a short time, and after being potted off grow away quickly. Though requiring no great amount of heat during summer, it should

be grown under glass, as its foliage is apt to become discoloured if too much exposed. Throughout the growing season the syringe must be used pretty freely, otherwise red spider is apt to make its appearance.—H. P.

INDOOR GARDEN.

IMPORTED CYCADS.

IN some parts of the Continent, more especially in the northern states of Germany, Cycads are valued for decorative purposes, and largely grown by some nurserymen. In a nursery at Leipzig I once saw many thousands, varying in size from such as were only large enough for 4½-inch pots to big specimens with stems 6 feet high or more, and bearing an ample crown of finely-developed leaves. So great and constant is the demand for these Cycads in Germany, that they are grown by the acre in Cuba specially for importation to Europe. An acquaintance of mine brought over many hundreds of *Cycas revoluta*, varying in size from an egg to that of a large Turnip, and they were packed in 200,000 *Latania borbonica* seeds. They arrived in perfect condition, nearly all the Cycads growing, and 90 per cent. of the Palm seeds germinated. I once had several hundreds of these imported Cycads, and succeeded in establishing the greater portion of them. When they came into my hands I thought that I had never had anything so unpromising to operate on. To all appearance they were worthless, there being absolutely no heart to them—nothing but the thick outer rind, so that they closely resembled a Cocoa-nut cut in half, not only in this respect, but in shape as well. It was late in August when they arrived, and I thought the best plan would be to make up a hotbed for them, as I felt sure that a strong bottom-heat would be necessary to induce them to root. Some were just about the size of an egg cut in two, but the largest were nearly a foot across. They were, however, as I have just said, one and all hollow right up into the apex of the stem. Pots of varying sizes were filled two-thirds full of crocks, and on these was placed fibrous peat; on that the *Cycas* stems were set, slightly bedding them in it and adjusting the pots to the plants, leaving just room enough for water. They were then plunged in a hot-bed composed of manure and leaves, with about 8 inches of sawdust on the top for plunging material. The soil was kept just nicely moist. On fine days they were gently sprinkled with water, and in the course of two months they had mostly pushed out leaves. One rather important detail I have omitted, viz., that the hollow stems were all filled with charcoal in small lumps, which it was thought would help to preserve them against decay. The result was that a very small proportion of them rotted. J. C. B.

Eupatoriums.—As winter decorative plants these are most useful. Cuttings of them taken in spring are now thrifty little plants in 3-inch pots and showing bloom buds. The cuttings may be struck in a hotbed, potted off, and set out-of-doors in the summer, and a cool Peach house suits them well in winter. Large plants of them are also very useful to cut from where room for their growth can be afforded. *E. riparium* and *E. ageratoides* are two of the most useful, the latter forming a good succession to the former.—F. W. S.

Pinks for forcing.—These should now be established in 5-inch and 6-inch pots in cold frames. If the pots are plunged in Cocoa-nut fibre refuse, they will not be injured by any amount of frost. They will require but little water at the roots, but they must not be allowed to get dust dry. Between Christmas and the first week in the new year they may be placed in any forcing house in which there is a night temperature of from 45° to 50° to begin with. Keep them near the glass; if they are at a distance from it, and where they do not get much air, they will not do well. It is worth some trouble to obtain good

heads of bloom of the pure white Lady Blanche or of the rich reddish purple Lord Lyons.—J. DOUGLAS, *Great Gearies, N'ford.*

Rhododendron Aucklandi.—It seems this fine *Rhododendron* is to be deprived of this name, by which it has been so long known, and for the future is to be called *R. Griffithianum*, that name having the claim of priority in its favour; but how is it that this change has not been made before, seeing that *R. Aucklandi* has, among other places, flowered at Kew for several years past? Even quite recently the specimen of it there still bore on the label the name of *R. Aucklandi*. Such alterations in nomenclature cause much confusion, and, as a matter of course, lessen the dependence to be placed upon authorities who give a plant a certain name one day, so to speak, and change it the next.—H. P.

Acacia platyptera.—Among the large collection of *Acacias* in the temperate house at Kew this is every season the first to expand its blossoms; several plants of it there are now in full bloom, while none of the others have yet reached that stage. Besides its value as an autumn and early winter flowering plant, this *Acacia* is also so distinct from all others, as to well merit cultivation, even if it bloomed with the bulk of its associates, from the peculiarly flattened conformation of the stems and branches, along the edges of which the little golden flower balls are freely produced. It succeeds well under ordinary greenhouse treatment and lasts in flower several weeks at a time.—T.

Poinsettias in the open air in Kent.—As my foreman was in the act of consigning some surplus *Poinsettias* to the rubbish heap after all were potted which we wanted, I stopped him and had them planted on a border close at hand, and the result as regards good growth was most satisfactory. Ever since I have, therefore, grown my *Poinsettias* in the open air during the summer months. After blooming, the plants are dried off in the usual way, and towards the middle or end of June the old soil is shaken from the roots and they are planted out on a south border in light, rich soil at distances of about 18 inches apart, after which a good soaking of water is given. During hot weather I mulch with Cocoa-nut fibre or, better still, short manure or decayed leaf soil, and as soon as growth commences we occasionally give a little manure water to the roots. Care is necessary in lifting and potting, operations generally done in the end of September, when they are transferred to a slight bottom heat, in order to encourage root action. Shading must be attended to during the middle of the day, and by this means we seldom lose any or few of the leaves. At present we have a fine lot of strong, healthy, dwarf plants with large bracts now colouring. It has been my practice for the past four years to plant out *Bouvardias*, *Callas*, *Eupatoriums*, &c., as above described, and I may add with the very best results.—THOMAS CARLTON, *The Wilderness, near Sevenoaks.*

*** We saw these plants in the open air in September and were surprised at their fine health and sturdy vigour.—ED.

SHORT NOTES.—INDOOR.

Nymphaea zanzibarensis.—Flowers of this noble Water Lily have come to us in a little box from America without note or letter. They have opened well with us, and even after confinement for some ten days in a close room emit a very delicate Primrose-like scent.

Amaryllis flowers not opening (Subscriber).—It is difficult to say why your flowers have not opened. This is, however, the wrong time of year for *Amaryllis* to flower. They ought to be resting instead of making a second growth and flowering, which must impair their vigour in March and April—their proper season for flowering.—J. DOUGLAS.

Triplet blooms on Lapageria rosea.—I have a plant of the red *Lapageria* growing in a large pot which has made this season a growth bearing eight triplet blooms. Is not this an uncommon occurrence? I have fed the plant with sheep manure, which I think deepens the colour of the blooms.—W. MILLARD, *Wood Green Park, Cheshunt.*

*** Blooms in triplets do sometimes occur on *Lapagerias*, but seldom to the extent of eight on a shoot.—ED.

Single Chrysanthemums.—I send six sorts of single *Chrysanthemums* which I think are well worth cultivating, as they flower after a good many of the large flowering sorts are past their best. My plants are now masses of bloom, some of them with hundreds of flowers the same as I send. They are invaluable for small vases and glasses, as they look so much lighter than the larger flowered sorts; in fact, they take just the same place as the single *Dahlias* do in relation to the doubles.—G. JUPP, *Branbridge Park, Balcombe.*

*** All pretty varieties, the deep rosy magenta flowers being particularly bright.—ED.

Chrysanthemum Val d'Or.—This is a new variety of the pomponne race of *Chrysanthemums*, flowers of which we have received from Messrs. Laing, Stanstead Nurseries, Forest Hill. It is a pretty sort with small globular flowers, perfectly symmetrical in outline and of a clear jonquil yellow. Some may think it too formal, but it will please those who like symmetrically shaped blooms. Messrs. Laing, who are devoting a good deal of attention to new *Chrysanthemums*, have in their large collections several other new pomponne sorts; among the best are those named Pomponne Rose, lilac-rose; Guillaume Délaux, rose and white; Arbre de Noël, bright orange-yellow; Diamant, crimson-red; La Désirée, snow-white; and Elise Laycillon, rose and deep golden yellow.

Welsh flowers.—The following were cut from plants growing in the open air at Baglan Lodge, Briton Ferry, South Wales, on the 27th ult.:

Anemone japonica	Stocks Ten-week
Ageratum	Pyrethrum
Calendula officinalis	Phlox Drummondii
Calceolarias	Marguerites
Carnations	Tritoma Uaria
Coronilla glauca	Veronics of different sorts
Chrysanthemums	Antirrhinums
Dahlias	Aubrietia purpurea
Gazania splendens	Roses
Larkspurs	Pansies
Pentstemons	Violas
Pelargoniums, scarlet	Nasturtiums

H. CLARKE.

QUESTIONS.

5255.—**Shanked Grapes.**—It has been stated that Grapes, if not thinned, will never shank. Is that so?—LANCASHIRE.

5256.—**Odontoglossum blooms falling.**—Can any Orchid-growing reader tell me why *Odontoglossum* flowers when half grown turn yellow and fall off?—A. T.

5257.—**Roman Hyacinth.**—I potted some of these about six weeks ago, placed them in a shed, and covered them with ashes, but as yet there are no signs of growth. Will someone kindly tell me if I have given them the proper treatment?—AMATEUR.

5258.—**Tap roots of fruit trees.**—Do these influence productiveness in any way? If so, how? At a meeting of the Barnsley Gardeners' Mutual Improvement Society this matter was recently discussed, but not settled at all satisfactorily. It was therefore resolved to ask the opinion of the readers of THE GARDEN on the subject, and to their decision I willingly submit it.—S. B., *Elmhirst.*

5259.—**Cobæa scandens** was supplied to me in error for *Clematis Jackmanni*, and it was planted in soil as directed for the *Clematis*. It has grown luxuriantly out-of-doors, covering a large disused fountain, and has produced over 200 large, beautiful, bell-shaped violet or purple flowers; it is even full of bloom now. I am told that it will die this winter. Can I protect or save it by covering its roots? It would be disappointing to lose so beautiful a plant. Perhaps some of your correspondents will favour me with a word of advice on the subject.—COBÆA, *Clapham Park.*

5260.—**Figs casting their fruit.**—Having a few Figs in pots that annually cast their first crop, I should be glad if someone would tell me how to prevent this. I noticed in THE GARDEN, October 25, an article on this subject, in which it was said that exposure to frosty weather was the cause of Figs falling (cf. Mine have been grown in a house by themselves, and have not been subjected to frosty weather, and to all appearances the wood has been properly ripened. Should they be root-pruned annually and started in bottom-heat? What will be the best method to adopt? Also, is it a wise plan to fork Peach and inside Vine borders up and fork in the manure with which they are annually mulched? Any information on these subjects will be thankfully received. I may add that the Figs were carefully watered at starting time and not allowed to become too dry or wet.—T. W. W.

ST. NICHOLAS HOUSE, SCARBOROUGH.

AT St. Nicholas House, the residence of Mr. Woodall, gardening operations are carried on under the personal and practical direction of Mr. E. H. Woodall, whose name is well known to readers of *THE GARDEN* from his frequent valuable notes on Tea Roses and other plants. Gardening is here of a distinctly two-fold character, as are also the two gardens. The decorative, I will not say bedding, garden, as it is by no means limited to that, which is around the house in view of the windows, stretches down the cliff to the seashore, where are also delightful rock-banks and sheltered nooks, some of which shall be alluded to hereafter, and the fruit and vegetable garden, which is quite apart, and some distance from the house at the other side of the town. Here flowers are also extensively grown both in the houses and out of doors. But to return to the former. Under the terrace at the south front,

On descending still further nearer the sea, of which one gets a peep now and then through the trees, one comes on a delightful series of sheltered slopes and nooks where Bamboos flourish and Veronicas provide an abundance of bloom and foliage. Here also *Cypripedium spectabile* has found a comfortable home and flowers in great beauty. But the great feature of this part of the garden is the beds of *Bouvardia Humboldtii corymbiflora*, which are a thing to remember for a lifetime—such profusion of bloom and abundant growth forming excellent plants to raise for providing cut flowers during the winter. Fine specimens of Pampas Grass and New Zealand Flax and Yuccas also add to the effect of this part of the grounds.

Now we must take a walk to the other side of the town to the fruit and vegetable garden, situated on a height above the town, where Grapes and Peaches, Nectarines and Tomatoes are grown

at least a joy for many months in succession, for so recently as November 11 a splendid bunch was gathered from the open borders. Many and choice are the varieties grown there, and I for one out of many can testify to the liberality of Mr. E. H. Woodall, ever so ready to distribute and extend the cultivation of his "good things."

Riverston.

J. T. Poë.

ROSE GARDEN.

THE MARECHAL NIEL CANKER.

SEVEN years ago I gave half a guinea for three strong plants on their own roots of this Rose. All are big plants now. They have all flowered freely, though not in the prolific way which I have seen and heard that others do. They are in a fair-sized and lofty house, but we have had to cut



St. Nicholas House, Scarborough.

shown in the engraving, is a deep border with mosaic pattern of summer bedding plants of low growth in front and noble groups of various varieties of *Tritoma* behind, well thrown out by the evergreen draping of the terrace wall and balustrade. Here the beds of *Gazania* are a sight to delight one, as it is just the sort of sun-trap they revel in, and where through more than one winter they have lived on to do duty for a second year. A parterre with varied groups of bedding plants with a background of trees and shrubs lies at some distance across the closely mown lawn. Beneath the terrace at the east front, under the drawing-room windows, is an ornamental conservatory with lantern roof, wherein are to be found choice climbers, such as *Lapagerias*, *Passifloras*, *Roses*, and *Camellias*, planted out, and stands for groups of flowering and foliage plants, with easy chairs to recline in and enjoy the continuous succession of bloom which is to be seen there at all seasons of the year. Further down the cliff, towards the sea, are banks and slopes for choice herbaceous plants, *Lilies*, *Dianthus*, &c., and glass-coped dwarf walls for *Tea Roses*, as well as a house devoted to their culture

to perfection in the extensive ranges of houses under the skilful direction of Mr. Hughes, the head gardener. One of the views given (p. 485) is part of the fernery showing a fine mass of *Polypodium* and *Nephrolepis* on rockwork in the foreground, with a background of *Asparagus* trained on the roof, providing an ample supply of exquisite foliage to associate with the quantities of cut flowers required for room and table decoration. The other view (p. 477) is in one of the stoves, where *Caladiums*, *Ferns*, and *Palms* are grouped in graceful combination. The bright and sunny days of winter on the north-east coast render successful plant growing under glass a more certainly attained result than in the southern and western districts, where cloudy weather is so prevalent during the short days of November to March. Violets, too, such as *Marie Louise* and *Victoria Regina*, being much in request for cutting in winter, are extensively grown in frames and boxes, as are also zonal *Geraniums* and *Primulas*. Last, but by no means least, should I mention how well *Carnations* and *Pinks* are cultivated in this garden, soil, situation, and climate all tending to make them if not "a joy for ever,"

armfuls of wood out of them for several years in order to get a reasonable amount of light down amongst other plants, and two Vines have been cut out as well to accommodate them. From the day on which they were planted to the present they have been watched and treated on certain premises as to the cause of canker, which, generally speaking, may be said to be peculiar to and inherent in this Rose. What the premises were when these three trees were set in different ways and subjected from their first year's growth to different treatment shall be stated, as then the line of experiments will not only be better comprehended, but the results may be more readily summed up and taken for what they are worth. About fourteen years ago I remember spending a day with Mr. John Harrison at the Catterick and Darlington Nurseries. The conversation about *Roses* during tea-time and the treat afterwards, in the shape of testing the then new and deliciously flavoured *Grape Mrs. Pince*, I have not forgotten. In his genial and quiet, but sanguine, way Mr. Harrison spoke about his new *Napoleon Rose* stock, which I saw growing in large quantities like *Willows* (it Low goes by the name of *Harrisoni*, and is an

Austrian Brier). One remark which he made about this stock was both instructive and teasing to me, who up to that time had had but a town experience with the *Maréchal*, and could hardly get it to grow, much less flower. He said, "I find this stock, from its gross and rampant growth, to carry the *Maréchal* better than any other." That was the first idea I received of the robust character of *Maréchal Niel*, and I had it amply verified on being shown some one-year's growths, all the length of a Rose house (I cannot remember how long now). Mr. Harrison seemed only to have one doubt, and that was whether on his new stock the *Maréchal* would resist canker. On own roots being suggested, he said he believed that to be the best remedy against canker if only people had patience and would pay the trade for the longer time which it took to grow as strong plants as worked ones. Premise No. 1 is that the *Maréchal* is safest on its own roots. Premise No. 2, canker follows the habitual stoppage of the sap tubes. This was suggested by the canker often being met with on trees from four to seven years old frequently at a part where two, three, or more strong branches issued from the main trunk, their junctions being but a few inches distant—that part of the trunk becoming so unnaturally thickened (warted), that the bark at first split lengthwise and afterwards snapped crosswise all round, when collapse ensued. Premise No. 3, canker is caused by accidental injury to the joints and bark or sap-tubes. This, without question, often happens from the way in which this Rose is grown in heated houses, pruned and trained. Very often canker sets in just over a set of pipes; then, though the disease is seldom serious, except on the stoutest parts of a tree, it is much more rapid and serious in its development, where, by straining the thick shoots at their joints, in order to train them, the joint-sockets get unduly stretched.

Let us return now to the three trees experimented upon on the line of these premises. Tree A is planted outside; immediately it enters the greenhouse the moist warmth must affect it. Bole 1 inch in diameter, but just over the pipes five or six very strong growths have been allowed to push; the bole about their junctions is more than double the natural thickness, and canker has set in there; own root. Tree B planted inside and where no heat from pipes can affect the main stem; all stout shoots, but one disallowed on bole until it has reached the glass at the back wall (10 feet) of a half-span. By this plan a more twiggy style of growth is obtained, in which there is no canker. The one shoot from bole was allowed to push at 4 feet from the ground and to grow to a length of 5 feet or 6 feet; then it was pruned to three buds. These pushed, and from their strength and nearness together on thick wood the only canker on that tree is found there; same age as A, also own root. C is planted at back wall near to B, roots inside; has twin shoots from the root, but no growth of note until the glass is reached. No training, away from warm pipe; same age as others; own root, sound.

It seems, therefore, that own-root *Maréchals* are not exempt from canker, but they have proved much better able with me to resist it than worked trees. In example A it is seen that where a given part of the main stem meets with genial conditions, either from a bend to better light, heat, or moisture, the sap breaks out in a number of stout shoots, and from the closeness of their junctions with the stem they contort the older tissues, excrescences are developed, the sap tubes are ruptured, and canker sets in. Does not the treatment and condition of B indicate that to prune away these gross shoots to one here and there would be safer? Twiggy growth is best and certainly the only flowering wood. I have come to dread seeing shoots start out of the bole half an inch thick, which if allowed will grow 20 feet or more in a season. The white spongy excrescence about their junction with the stem is what precedes canker; if such shoots come from the roots they are welcome, and it is a question whether such shoots would not emanate thence were the trees under natural conditions. It has often been remarked that the

Maréchal collapses from canker when at an age capable of putting out strong shoots, and nearly always after a show of extra vigour; whether the premise is right or wrong, that the *Maréchal* kills himself by living "too fast," I cannot say; but the above two sets of facts seem to agree that he does, and that as just stated. The supposition that much canker is caused by accident or careless training, I feel sure deserves some attention. My tree A reads like a book on this point: strong shoots bent too sharply develop canker where the tissues are broken; strong shoots naturally forked from the main stems are too often pulled into horizontal positions, and when this happens where the shoot is new and green, the unnatural strain at the joint of old and new wood has in several cases ended in canker. I find, and anyone who cares to try it may soon learn, that the old bark of *Maréchal Niel* is susceptible to canker on receiving the least injury; a tie too tight will certainly cause it, and so will undue pressure against wire with which the shoots are interwoven; a pierce with one of its own prickles is a striking proof of this. Two facts are worth keeping in mind when it is sought to avoid the loss of favourite specimens of this Rose, and they are these: Whilst young wood will outgrow an injury or may be cut out, old bark is slow to or rarely heals. Next, where several thick shoots near together issue from old wood there is danger, more or less according to their number and strength. Example C shows that where all stout strong growths come only from the root, and the risks of damage are minimised by leaving the twiggy growths alone, canker is at least longer kept at bay than it otherwise would be. I think there is something in the fact that this disease often sets in on parts over warm pipes, and the way in which our glasshouses are constructed generally, and the almost compulsory way in which we have to bring climbers over the pipes might account for a general evil of this kind. Doubtless the remedy for canker will be dependent upon the correct finding as to its cause, and which the foregoing remarks are not at all supposed to have elucidated, but which constitute a mite of information, to which I hope more will be added; for, after all, when such observations are restricted to one place or batch of plants from a possible set of peculiar conditions, the deductions to be made therefrom can only have a relative value. It would be interesting to learn how far others have made similar or dissimilar observations, for surely a disease so fatal to a Rose, and such a Rose, ought not to be left unattacked.

Woodville, Kirkstall.

J. WOOD.

Preparing Roses for forcing.—By this time Roses should be well established in the pots in which they are to flower, and they ought now to be pruned—that is, if they are to be started into growth early in January. If the plants are placed in a house, kept quite cool, and if they are, as they ought to be, kept dry at the roots for about ten days or perhaps two weeks, the wounds will heal over and there will be no bleeding. If no other accommodation exists for them at forcing time, they may be started in an early vinery.—J. DOUGLAS.

Large Marechal Niel Rose.—Mr. Vallance, a well-known gardener and exhibitor about Bristol, is cultivating at Redland Lodge, on the outskirts of that town, what the Americans would call a "mighty tall" *Maréchal*. The house in which it is growing is span-roofed, 33 feet by 18 feet; in the centre 13 feet above the path. The Rose was planted on the middle of the north side eight years ago, and covers the whole of one half of the span, and would long since have covered the whole house, but Mr. Vallance, having learned by experience to mistrust "the loveliest of the lovely," planted another on the opposite side in order that if one should retire from the battle of life and go dead in a week or so, he might not be left comfortless. The following are some of its dimensions: The stock just below the bud is in girth 8½ inches; where the two buds are inserted it is 20 inches; one of the branches

is 9½ inches round and the other 7½ inches; where the lowest branch joins the stock it is 16 inches. This last measurement is round the branch alone.—C. A. M. CARMICHAEL.

FLOWER GARDEN.

RAISING NEW AURICULAS.

I CANNOT imagine where "W. S. B." (p. 436) picked up the notion that every Auricula at present known would be outdistanced in two years. I know, however, that there are many good seedlings at present only in the hands of raisers, and that it is not unlikely that every year will add to the number of distinct and good kinds. As to Sapphire, Mr. Horner gave me a small plant of it some three years ago, and was very cautious as regards saying anything in praise of it. His words were: "It is pretty, and an improvement on Smith's Formosa." It certainly is a great improvement on Formosa, and is by far the best of the blue selfs. Like nearly all Auriculas, it will flower coarse sometimes, and it has a pale tube, but none of the violet or blue selfs have yellow tubes. We must take the best we can get, and will have to be content with Sapphire as the greatest advance in its colour until Mr. Horner or "W. S. B." raises a better. What does "W. S. B." think of Heroine (Horner)? As Sapphire takes the lead in the blue selfs, so Heroine is ahead of the dark or maroon selfs. It can be compared with none of the old varieties. Campbell's Pizarro, which held the highest position hitherto, will not be able to compete with it. Another dark variety certainly inferior to Pizarro is Othello (Netherwood), so much esteemed by the northern growers, that they placed it highest on the list at the last general election. Mazzini (Pohlman) and Ellen Lancaster, by the same raiser, have not kept up their maiden promise of first-class quality. There are other varieties being proved which will certainly supersede all the old varieties, with the exception of Heroine. Duke of Albany, raised and exhibited by myself, is the darkest of all the selfs, with pure white paste and bright yellow tube; the petals are notched, which is a fault. Sir W. Hewitt, exhibited for the first time at the Royal Botanic Society's exhibition in March last, is also very promising; it was awarded a first-class certificate on that occasion. It is but reasonable to imagine that there are other varieties in the hands of those who have produced such good things, but it must not be supposed that these new varieties are to be introduced to the public in a year or two after they are raised. They cannot be propagated so rapidly as Carnations, Dahlias, Hollyhocks, Pelargoniums, and other flowers of that type.

SOME VARIETIES OF AURICULAS grow freely enough; others are just as slow of increase. Some kinds may be cultivated for six years and never produce an offset, unless some violent opposition is opposed to the ordinary forces of Nature, such as decapitation and trusting to the head forming roots under a bell-glass, while the trunk may be induced to form an offset or two. The right way in which to get up a unique collection of Auriculas is to raise seedlings. I have continually urged upon fanciers the importance of doing this, and have not unfrequently been met with the objection that they have not been able to obtain seed from the best varieties. There is, however, much pleasant amusement in improving such flowers as one can get seed from. It may be useful to state that in order to obtain anything like good results, the flowers ought to be hybridised as follows, viz., green edge with green edge, and grey with grey. Such flowers as George Lightbody can easily be obtained, and may be crossed with such as Dr. Horner, Alexander Meiklejohn, or John Waterton. In green edges Alderman Napier, Prince of Wales, or Trail's Anna might be used, but Talisman, Prince of Greens, and Col. Taylor can be obtained now at a moderate price. In the white edges, Read's Acme grows almost like a weed, and should be cheap enough; cross this with Smiling Beauty or John Simonite

if it can be obtained. Conservative, recently sent out by Mr. Turner, has a vigorous constitution, combined with good quality in the flowers. Earl Grosvenor and Miss Arkley are two old white edged flowers that might be crossed with the best of the recent kinds. In the selfs there is considerable room for improvement in the blue and violet colours. Sapphire and Formosa are both novel in colour. Mrs. Douglas and Charles J. Perry are brighter, and may be described as violet-tinted. Any or all of them can be improved by judicious crossing. After the seeds have been obtained, the next thing is raising the plants. Some of the best and most successful cultivators sow the seeds as soon as they are ripe, and some of the young seedlings appear above ground two or three weeks afterwards, the remainder of the seedling in the ground until the spring, when it vegetates early in February. Last season I did not sow until January, and placed the pots containing the seeds in a hotbed, where they had what was thought the advantage of a little bottom-heat. But this did not help them much if any, as the plants did not appear quite so freely as was expected. They were then removed to a pit from which frost was just excluded, and the young plants appeared much more freely. Most of them are now good plants in 3-inch pots, and three parts of them at least will produce good flower trusses next season.

THE FLOWERING SPECIMENS, named varieties, and seedlings alike should now be kept quite at rest. They require very little water; indeed, for the next two months they will do without it altogether. Admit air quite freely; even during the recent frosty weather we had the lights open at night, and they are drawn off altogether in the daytime. The outer leaves are now rapidly decaying, and it is well to look over the plants once in two or three weeks and remove them; at the same time any green fly that may be seen should be removed with a fine brush. Green fly above ground and the white beneath do much damage if not destroyed in time. J. DOUGLAS.

CHRYSANTHEMUMS AT HOLMBURY.

THROUGH the liberality of the Hon. F. L. Gower, M.P., the gardens at Holmbury were lately thrown open to the public for the third season, the object being to give the inhabitants of the surrounding neighbourhood an opportunity of viewing the fine collection of Chrysanthemums then in full flower. As evidence of the appreciation of the boon I may state that on Sunday, the 23rd ult., no fewer than 536 persons visited the gardens evidently much interested. The collection, which this year is unusually fine, contained some eighty varieties of the best in cultivation, including notably the following: Chevalier Domage, Alma, Lady Granville, The Cossack, Jardin des Plantes (yellow and bronze), Lady Slade (a beautiful incurved lilac flower), Gloire de Toulouse, Fair Maid of Guernsey, Meteor, Yellow Dragon and its red variety, Bismarck, Christmas Number (in fine condition), Barbara, Refulgence, Paul Délaux (with its golden tips), Meg Merrilies and Mrs. C. Carey (good late varieties), Vesuvius, Chang, Chromatella, Empress of India (white and yellow), Dr. Masters, M. Juan Cruz d'Eguileor, Mdme. C. Audiguer, George Gordon, Bouquet Fait (a lovely rosy lilac), Star (a remarkable variety), Flambeau, Marquis of Lorne, Hiver Fleuri, Mrs. G. Rundle, Model, Angelina, Peter the Great (very good), The Sultan (another pleasing rosy lilac), Fleur de Marie (Anemone-flowered), Orphée, Prince Alfred, Grandiflorum (a very fine yellow flower), and Golden Queen of England.

In addition to the Chrysanthemums, attention was directed to a houseful of Eucharis, consisting of healthy plants throwing up some 120 spikes of flowers, some of which were fully expanded. The stove, in which were tastefully arranged Dracenas, Crotons, Alocasias, Anthuriums, &c., and the ever-pleasing Rivina humilis with its transparent coral-coloured berries, was also an object of interest, as was also the conservatory, a house of large dimensions, the walls and rockery being covered with Nephrolepis and other Ferns

growing luxuriantly, accompanied by Selaginellas, Begonias, and other kindred plants. The grounds likewise afforded much pleasure from their well-kept condition. Although upwards of 1000 people visited the gardens on this occasion, no damage to plants or flowers was perceptible. C. D.

MANURING PAMPAS GRASS.

THERE is such a difference between stunted specimens of this noble Grass and those luxuriating in a rich congenial soil, that it is well worth while, when it is first planted, to be at the expense of thoroughly preparing the ground for its reception. A moderately good soil, if broken up and well enriched with manure to a depth of 3 feet, will suit it well, but if naturally poor it is better to replace it with soil of a better character. Where, however, large old plants show signs of weakness and soil exhaustion, much may be done to re-invigorate them by means of surface applications of liquid and solid farmyard manure. We have a few fine old-established clumps of this Grass whose appearance indicated want of food, and while anxious to improve their condition, we wished to avoid the slightest risk as regards their safety by undue root disturbance; the turf, therefore, was removed to a distance of about 5 feet from the stem of the plants all round. The old soil was then forked off till the roots were reached; maiden loam and well decayed farmyard manure in equal parts were applied and the turf was relaid. This was done last autumn, and since then the plants have grown and flowered with doubly increased vigour. During the driest period of last summer good delugings of water were given them. Whether the good effect was the result of the exceptionally fine season or the treatment just recorded, I cannot say, but certain it is our plants have flowered earlier and much better this year than usual. The beautiful feathery plumes are much valued for indoor decoration, and therefore we have usually to resort to some means of protection to keep them from being disfigured by early frosts till fully developed, or nearly so. They retain their graceful lightness best when dried in an upright position just as they grow; in fact, all Grasses are best dried in that manner. If not quite fully developed, we free the bottom flowers from the sheath and gently shake the heads out before a large fire; afterwards we fix them in an upright position in some dry, airy place.

Cranmore.

A. MOORE.

The Tree Poppy (*Romneya Coulteri*) from which our plate was drawn continued flowering at Munstead until November 16. On that date a bunch of not fully-grown flowers was picked from a plant in a fully-exposed border. The blooms lasted for five days later in the house in water. They were agreeably scented—not the Poppy scent, but more like that of a Magnolia. In all this plant flowered four months, and is now quite fresh and healthy and about 7 feet high.

5283.—*Ampelopsis sempervirens*.—I can answer fully the query of "T. T." as to the clinging nature of this plant. When first I purchased it the difficulty was in making it grow, but after three removals I have quite succeeded. It is growing well, and clings firmly to the tree against which it is growing, just like *Ampelopsis Veitchii*. As to its merit, there has not been time enough since its introduction to speak positively, but at present I think well of it for the purpose to which I have applied it.—K. K., *Taddyforde, Devon*.

Flowers in the Isle of Wight.—Perhaps I can help Mr. Ewbank to account for his success in the Isle of Wight, while friends inland complain that they cannot bloom such and such plants. It is simply light that makes such a difference. The two plants that he mentions (*Exogonium Purga* and *Montbretia Pottsii*) give me the clue. Here, in a somewhat tree-grown garden, darkened by town smoke when the good westerly wind blows, these two plants refuse to flower, though they grow well enough; but a mile and a half away, in an exposed upland garden with nothing

to break the force of the wind or the light of the sun, they bloom profusely without any special attention. Gardeners abroad whitewash their walls to obtain more light; how much more necessary is it in this island, and yet how rarely thought of! The absence of any great summer heat and the milder autumn nights are the causes of Mr. Ewbank's flowers continuing so long.—E. H. W.

Chrysanthemums out-of-doors.—I agree with all that is said by "R." (p. 436) in reference to his garden being gay with Chrysanthemums; when well grown they are grand plants for out-door decoration, particularly when placed under the protection of a wall. Thus situated, the blooms are larger than they otherwise would be, and they last longer in consequence of their escaping rain and frosts to which they would be subjected in open borders. Pompones, reflexed, and Japanese kinds are better suited for out-door growth than incurved sorts, as the petals of the latter hold water; whereas the reflexed and Japanese kinds have no cups in which rain water can lodge.—E. M.

Wintering Tigridias.—With me the bulbs of these are very liable to decay if allowed to remain in the ground throughout the winter. In order to prevent this, therefore, they are lifted as soon as the foliage dies down, stored in boxes of silver sand, and kept in a dry, airy shed, just out of the reach of frost, till the return of spring, when they are again planted in the open ground. To this mode of treatment exception must be made in the case of a large clump which has become established at the foot of a south wall and which every year yields a great profusion of blossoms. Sometimes in lifting, if the autumn has been a wet one, the bulbs will show signs of decay, and as far as possible to prevent this they are surrounded at planting time with clean silver sand, which tends to preserve them.—ALPHA.

Linaria multipunctata—Allow us to send you a small plant of this *Linaria* which has been in bloom now over four months, and to all appearance will continue to bloom for some time to come, the plants being covered with flower buds. It is still growing at present, though we have had several severe frosts, which have cut down Chrysanthemums in more sheltered positions. We have two lines of this little gem fully exposed to all weathers. It is not so tall as any of the *Lobelia speciosa* section and is quite bright with heads of yellow flowers, which at this season help to brighten our gardens. The plant sent is in its natural form, never having been pinched or stopped in any way, and is full of ripe seed as well as the old seed vessels.—RODGER, McCLELLAND & Co., Newry.

*A pretty little tufted plant with slender stems terminated by clusters of bright yellow flowers copiously spotted with black. The leaves are small, narrow, and glaucous. It would make, we imagine, a capital rock garden plant.—ED.

Evergreen plants for rockwork.—Rockeries should now be examined with a view to improving their appearance in winter as well as summer by introducing plants that retain their foliage intact throughout the year. In large rockeries, or even where the individual stones are above the average size, a few evergreen plants scattered here and there are indispensable. They hide the bare stones and set off to advantage spring and autumn-flowering bulbs. Nearly all the species of *Acanthus*, most of them being striking plants, are valuable in such positions, more especially *A. longifolius*, *spinosus*, and *mollis*. In well-drained soil they succeed admirably and are not at all troublesome. When in flower they are very effective. The Pampas Grass is also very attractive, especially when in flower, the variety of it called *plumosum* being quite a gem and exceedingly beautiful. The common Globe Artichoke, although ordinarily grown for culinary purposes, is one of the most useful of fine-foliated plants; when allowed to flower, however, it becomes leggy, and, therefore, the flower-head should be picked off when quite young. The leaves are very deeply divided, and downy white on both sides—resem-

bling, in fact, frosted silver. A good mulching assists it considerably. Both *Helleborus foetidus* and *H. lividus* can also be used effectively in this way.—K.

Planting Daffodils.—In my reply to Mr. T. Smith, of Newry, on this subject a week or two back I stated that his assumption, that our *Tritomas* consisted of early and late varieties, was a mistaken one; that the two plantations of *Narcissi*, one of which bloomed freely because it was shallow planted, and the other sparsely because it was deeply planted, were both practically out of the same bag; and that hence Mr. Smith's conclusions were wrong and irrelevant. These statements, Mr. Smith (who sought this controversy) says, are too "misty" for his comprehension, and he declines to answer them. I therefore leave them to your readers, that they may judge whose comprehension it is that is at fault. For my part, I am quite unable to make the matter clearer. Mr. Smith does not appear to have experimented in the direction indicated, but I commend Mr. Carmichael's note in last week's *GARDEN* to his attention, which states practically that it does not pay, even in the Scilly Islands, to plant Daffodils deep, and that shallow planting is practised universally there.—J. S. W.

Wintering bedding Pelargoniums.

This is an easy matter in the case of experienced gardeners, such as "S. D." (p. 393) is, but in the remarks which I made (p. 364) I was thinking of that numerous class of amateur gardeners who have not heated structures at command or means for carrying out the details of culture properly. Such growers have often no means of preserving their stock, except housing it in ainery that serves for plant house and many other purposes or a cold frame or two, as the case may be. We have hundreds of such culturists in this locality. I must say that more Pelargoniums are lost by damping off in mild winters than in those that are severe. Frost renders it absolutely necessary to have fire-heat to keep it out; this dries the atmosphere, and renders the Pelargoniums safe from damping. I have tried all sorts of ways of wintering Pelargoniums, and I can confidently say that leaving the tops entire gives the best results. As to space occupied, we get the contents of a large bed into one box about 1 foot 6 inches square, and in spring every one makes a fine bushy plant, and we get several young ones from the top cut off. This plan is quite as easily carried out in the case of plain-leaved as in that of variegated kinds—at least, I find it to be so.—J. G.

Winter-flowering plants.—The following four stand in the foremost rank amongst plants which bloom in winter, because of their beauty, the lasting qualities of their flowers, and the ease with which they can be managed. They are *Habrothamnus* (now called *Cestrum*) *elegans*, to the good and useful qualities of which we have again and again directed attention, and which consist in its sturdy growth, long, gracefully pendent shoots, and large bunches of deep red, urn-shaped flowers, which are borne on the ends and along the sides of the shoots, remaining long in beauty. We call this plant a winter flowerer, but it is really a perpetual bloomer; at least, the plant to which we are alluding has not been without bunches of flowers on it for these past two years. It is growing in a cool greenhouse, where it is planted on the corner of a *Camellia* bed, and grows wild, *i.e.*, wants little or no attention. The second plant of our handsome quartet is *Luculia gratissima*, a plant frequently noticed, yet even now comparatively unknown or uncared for by a certain class of cultivators. At this time of the year a large bush of it with healthy green leaves and enormous heads of blush-coloured flowers, most fragrant and beautiful, is a fit subject for special eulogy. Such a plant we saw a day or two ago, a tall, well-furnished specimen bearing about fifty heads of bloom, the odour of which was most delightful. This, too, is planted in a bed along with *Camellias*. *Hibbertia dentata*, the third plant, is a handsome climber, with twining shoots of bronzy green and dark red foliage, the latter forming a telling background to the bright

yellow flowers, something like those of the *St. John's-wort*, and which are scattered in profusion all along the twining shoots. For people with artistic tastes this is a grand plant. The fourth plant is *Bomarea Carderi*, one of the first of the *Bomarea*s to become popular, and still, perhaps, the best of them. In its large pendent umbels, which on strong healthy plants are nearly a yard in diameter, and are composed of numerous rose, green, and chocolate-brown flowers, in form like those of the *Lapageria*, and like them lasting in perfection for several weeks, this *Bomarea* possesses characters of exceptional merit. It flowers, too, at almost any time of the year, but it is now in great beauty, and will remain so during the greater part of the winter. I saw all these four plants in perfection lately at Kew.—W.

Flowers in bloom at Dangstein.—The following flowers were gathered in this high exposed part of Sussex on November 21. As they are a singular mixture of spring, summer, and autumn blooms, a list of them may be of interest to some of the readers of *THE GARDEN*. They consist of—

<i>Spiraea japonica</i>	<i>Coreopsis</i>
<i>Lithospermum</i>	<i>Michaelmas Daisies</i>
<i>Linum grandiflorum</i>	<i>Arctotis</i>
<i>Nasturtium</i>	<i>Rudbeckia</i>
<i>Viscaria</i>	<i>Canterbury Bell</i>
<i>Clarkia pulchella</i>	<i>Petunia</i>
<i>Godetia</i>	<i>Stock and Virginian Stock</i>
<i>Sweet Peas</i>	<i>Tritoma Uvaria</i> (this has been in bloom since May)
<i>Chrysanthemum coronarium</i>	
<i>Helichrysum</i>	<i>Auricula</i>
<i>Acroclium</i>	<i>Gentianella</i>
<i>Xeranthemum</i>	<i>Dahlias</i> , single and double
<i>Sweet Sultan</i>	<i>Cactus</i>
<i>Cornflower</i>	<i>Zimapani</i>
<i>Senecio elegans</i>	<i>Gaillardia</i>
<i>Scabious</i>	<i>Eschscholtzia</i>
<i>Lupines</i>	<i>Anemone</i>
<i>Wallflowers</i>	<i>Althaea</i>
<i>Marigolds of all kinds</i>	

The majority of these had numerous well-formed flowers in no way deficient in size or colour. Some *Yuccas* have thrown up large flower-spikes, but the weather can hardly last for them to expand.—L.

Fuchsia-leaved Calceolaria.—This *Calceolaria* (*C. fuchsifolia*) is seldom seen in a flourishing condition, but just now in a narrow border close to one of the houses of the T range at Kew a small plant of it is flowering freely. Its blooms, which are pale yellow, are borne in large clusters, but those on the Kew plant are not nearly so fine as some grown by Messrs. Rodger and McClelland, in whose nursery at Newry this *Calceolaria* thrives unusually well. Under greenhouse treatment it flowers throughout the autumn and well on into the winter. Its winter flowering qualities are also inherited by a hybrid raised between this kind and the tall-growing *C. Pavoni*, by Mr. Burbidge, whose name it bears. *C. Burbidgei* possesses a great advantage over *C. fuchsifolia*, inasmuch as it thrives well under ordinary conditions, inheriting, as it does, some of the vigorous character of *C. Pavoni*, which in foliage it a good deal resembles. It has, however, the branching habit and finer flowers of *C. fuchsifolia*. It is a really good winter flowering plant. *C. Pavoni* itself quickly forms quite a bush if planted in the open ground, and around London survives the winter with but little protection. Out of doors it flowers towards the end of summer and beginning of autumn, while in winter it may be cut to the ground, when all the protection needed will be a little litter placed over its crown.—T.

SHORT NOTES.—FLOWER.

Polygonum vaccinifolium.—On November 26 this rock plant was very pretty in Surrey on the sand. It grows less vigorously than on clay soils, and the flowers are more profuse and compact; in fact, the plant in this state is a first-rate rock garden one.

Japan Hop.—Specimens of this were exhibited by M. Cornu, of the Jardin des Plantes, at a recent meeting of the French National Horticultural Society. This Hop was obtained from seeds sent to that establishment in 1880. It is of extremely rapid growth, forming masses of fine foliage 8 feet high in the course of a season, and is said not to become bare at the bottom. This would seem to be a desirable addition to our list of strong-growing hardy climbers.—BYFLEET.

Coreopsis lanceolata.—I never meet with this *Coreopsis* now-a-days, and as it is a great favourite of mine, if one of your readers could post me a small piece I should be greatly obliged, and would send in return a plant of the hardy *Cactus* (*Opuntia Rafinesquiana*, true). I think this *Coreopsis* likes a rather light and well stirred soil, where it is safe against stagnant moisture and yet does not suffer much from drought. Under favourable conditions it runs up to a height of nearly 3 feet, and forms a bush as much through—bright and attractive in appearance.—J. CORNHILL, *Byfleet, Surrey*.

KITCHEN GARDEN.

MANAGEMENT OF GARDEN SOILS.

THE cultivation of kitchen garden and fruit crops is annually becoming more important. Many amateurs are anxious to grow good vegetables and fruit, but in only a few cases are anything like successful results obtained. The question arises, As to why business men and others who own suburban gardens of moderate dimensions fail either to obtain much pleasure or profit from them. As far as I have been able to judge, at least, one cause of failure is to be found in the mismanagement of the soil. It is impossible either to obtain good fruits or vegetables unless the ground is in good condition. One very important part of the management, and one that is sometimes not even thought of, is draining. A sour, wet subsoil is not good for vegetables, but it is positively pernicious to fruit trees. A case occurred within my own knowledge which shows the necessity of draining for carrying off superfluous water. A commercial man built himself a house on a piece of ground of considerable size; the part most distant from his house was far too wet in which to grow anything satisfactory in winter, but he either could not or would not see the value of having it drained until an energetic neighbour bought the portion adjoining, which was also wet. His first attention was given to draining, and one drain was cut within 6 feet of his neighbour's property. The result was so good, that the neighbour was delighted, and saw at once, by this practical illustration, its value in improving wet soils. The drains should be cut 3 feet deep, and they must have a fall to one 3 feet 6 inches deep at the lowest part of the ground. This main drain should be of 4-inch pipes; the others should be 3-inch. The next step to be taken is

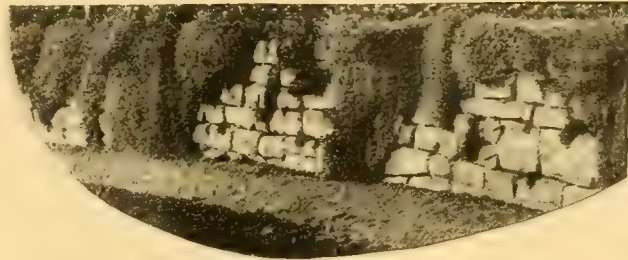
PULVERISING THE SOIL. This is most frequently done by digging; but in the case where new ground has to be broken up this is not sufficient. Trenching is necessary; but in doing this a serious mistake is often made, and that is the common one of trenching up new ground 18 inches or 2 feet deep, burying all the surface soil in the bottom of the trench, and placing 9 inches or a foot of sterile soil on the surface. The result of this is that the first crop is often lost, and no good results are obtained until the ground is retrenched and the subsoil returned to its old position. In some soils the subsoil is good to the depth of 2 feet, but in heavy clay soil it is almost impossible to grow anything in it until it has been thoroughly broken up and exposed to the weather for some years. The right way to break up such soils is one that will gradually bring them into cultivation without losing a crop at all. Our plan is to take out an opening at one end of the ground about 3 feet wide. An ordinary spit must be taken out, also the loose earth, which will give a depth of 9 inches or 10 inches. The bottom of this trench must be dug up, which will give 6 inches more; over the loose bottom a dressing of manure should be placed; then mark off a similar width, dig out another spit, and throw it over the manure with the loose earth. The bottom is again dug up, the manure placed over it, and the same process is repeated to the end of the garden. In this way the soil that ought to be on the top is kept there, while the subsoil is loosened, and thus made pervious to the air. Next season the ground may be worked a

little deeper, the next year deeper still, until the full depth of 2 feet is reached, if the ground admits of it. In case it is intended to crop a part of the ground with

FRUIT TREES, this gradual pulverisation of soil is not so easily carried out, but it is not so essential for fruit trees. Some years ago I had to deal with a garden that might fairly be said to be the very worst possible for growing fruit. The ground varied very much, as it does do in almost every garden of even moderate dimensions. The ground in this case was marked out for the fruit trees, and it was trenched about 20 inches deep. To do this it was necessary in some places to take out 9 inches of gravel and substitute for it 9 inches of soil. This might appear gardening under difficulties, but it was really not so, as the gravel was wanted for walks, and a large portion of it was used for that purpose; indeed, as it was taken out of the ground it was wheeled on to the walks. In some cases the depth of ground was ample, but all through the piece it was necessary that the poor subsoil should come up to the surface. This

placed round the roots of each. Next season we started at one end of the fruit borders

blossomed well. Pyramid Morello Cherries on the Cerasus Mahaleb stock were annually laden with



Creeping rock plants on a wall at St. Nicholas House (see p. 473).

and re-trenched the whole of the ground, replanting the trees with some fresh loam round the roots of each. The trees did remarkably well, and only two cankered in 150. They comprised

their crimson fruit. I am at present dealing with a heavy clay soil, getting it into good condition for fruits and vegetables. The soil referred to above did not require to be drained; it was drained naturally. Digging drains would not only have been a misapplication of capital, but might have been positively injurious. In the case we are now dealing with it was easy to see by the state of the soil that the ground must be drained; this was done, of course, and the soil was trenched 20 inches deep, and, being poor, some manure was added, but it does not answer to use too much of this in the preparation of the soil for fruit trees, as it causes them to produce vigorous wood growths instead of fruit-bearing wood. If the trees should not be sufficiently vigorous, this can be remedied by mulching round the roots with rich, partially decayed manure. The different kinds of kitchen garden crops require treatment suitable for each. Take Asparagus, for instance; this requires very deep and very rich soil; if the ground can be trenched 3 feet deep, so much the better. I made six Asparagus beds just twenty-one years ago, and they are now producing excellent Asparagus, quite as good in quality and quantity as they did at first. A piece of ground was chosen that could be trenched 3 feet deep. In the bottom of the trench a good layer of stable manure was placed, over this a foot of earth, then another layer of manure, more earth, manure again, and the spit of earth from the bottom of the next trench finished off the work; this was continued trench by trench until the work was finished. We planted in March, but I would much preferred to have cropped the ground lightly with something else the following season and re-trenched it in the autumn, planting it out with one-year-old Asparagus the following spring. I did not intend to go into the culture of crops, but may remark in passing that the young plants should be carefully supported with sticks the following season to prevent their being snapped off by winds. The ground for

GLOBE ARTICHOKEs may be prepared in the same way, although it is not quite so essential to cultivate so deep for this crop as it is for Asparagus. Heavy soils are as a general rule much improved by a dressing of quicklime—a bushel to the rod is a good dressing; it can be slaked and thrown over the ground at once, forking it in immediately after. Seeds can be sown or Potatoes planted on the ground at once; they are not injured by the lime. The market gardeners near London use a great deal of gaslime to throw over the land, but it must either be applied very sparingly, or if a good dressing is used, the ground must not be cropped for a few months after. It is not a bad plan to use it now on ground that has to lie fallow during the winter and be cropped in the spring. Perhaps the best way to use gaslime is to mix it with weeds, trimmings from ditches, or the roots of Couch Grass gathered from fields. The lime will kill any sort of weeds or seeds of weeds mixed in the proportion of two parts of the weeds to one of the gaslime. A great deal of mischief is done by working the ground when it is not in good condition. When soils, especially heavy soils, are wet, it is best to let them alone; it is better almost to be idle than to dig or trench heavy soils



View in one of the stove houses at St. Nicholas House, Scarborough (see p. 473)

was a case where surface-rooting stocks were not only best, but the use of them was the only means whereby anything like good results could be obtained, and the results were most satisfactory. All the trees were planted in the subsoil, but half a barrowload of good decayed loam was

Apples, Pears, Plums, Cherries, and Medlars. The Medlars were a great success; they have been bearing annually for twenty years; the Apples, too, were of excellent quality, though not large. The Pears were only of medium size, but the flavour good. Plums were large in size and the trees

in a wet state. Take advantage of the surface being dry to do the digging. Another mistake made by gardeners and amateurs alike is that of hoeing and raking waste ground in summer. It would not take longer to dig the weeds into the ground than it does to hoe the ground and rake them off; and the ground, after being dug, is in a much better condition than it is after being hoed. The more heavy soils are dug or forked over during the summer months the better are they prepared for the reception of the crops. If lime rubbish can be readily obtained, this makes an excellent dressing for stiff soils. Stable manure is also to be preferred to any other; we find that from stables where peat or Moss litter is used the best.

J. D. E.

THE KITCHEN GARDEN HOPELESS.

WE have chosen this name for a common type of kitchen garden which we sometimes see in country places. Wild and rugged is the general effect, the walls half covered with many fruits, inferior as a rule, weeds often rampant, and an ugly air of ragged desolation prevailing everywhere, as if the owner had not sixpence to spare. The last picture of this sort we have seen was in a place where, however, he had spent £70,000 in "improvements." The error is in the planting. It is quite a mistake to grow fruit trees over the kitchen garden everywhere. We cannot grow vegetables well in such places, and in an attempt to do so we break away the roots of the trees. We believe that this induces canker and other troubles and is the main cause of our poor garden fruit culture. One-fourth of the place entirely given to vegetables, divested of walks, large hedges, old frame grounds, old walls, rubbish, and other impedimenta would give a far better stock of vegetables. Such a spot well cultivated would be a pleasure to see. On the other hand, dig up the trees and put them together in the other half, prepare the ground thoroughly for them, let their roots come up to the surface and feed them there, hoe it regularly to keep it clean until such time as the trees begin to cover the ground; then they assist in keeping the latter clean. It is not merely the ugliness and the loss of the mixed garden which we have to deplore, but the miseries of the unfortunate gardener who has to look after such a garden in addition to a large pleasure ground. How is he to do his duty by the many things so hopelessly mixed up? Here a decaying Plum, there on one side a patch of Black Currants, then a lot of Gooseberries, backed up by and held in with a rank Privet hedge made to protect some plants in old times, and so on through the sorry catalogue. The continual mutilation of the roots of fruit trees has made such irregularities in their ranks, that anything like systematic planting does not exist. In fact, if the whole cost of the garden were doubled, and all put in some of the kitchen gardens of this sort that we see, it would be absolutely impossible to get a good result. Clear them out, trench thoroughly, and otherwise refresh the soil. Put the fruit trees in one part—the higher ground if any—to such an extent as you desire, and the remaining part thoroughly devote to vegetables, cultivating the ground in the best way, and having it always a fertile green vegetable garden, a pleasure to look at and an example to the neighbourhood. The vegetable food, too, would be more wholesome from continual good light and air; for shade from ragged and profitless trees and bushes and hedges is one of the evils of this hopeless kind of garden. The broken crops, too (sickly patches they often are), are not such as one can be proud of. Within the past few weeks, in the garden, well kept and by no means starved, of a fine old place, we saw the gathered rubbish of the borders, long stems of flowers, such as Golden Rods, being trenched in deeply around the fruit trees! Who, with any thought of what plants and trees are, can expect a good result from fruit trees in such a case? Separation of the two things complete and final is the true remedy. There should not be the root of a fruit tree in the way of the vegetable grower. No spade should even enter the ground

where fruit trees are planted—at least not till we want to remove them.—*Field*.

Blight on the Brassica tribe is unusually prevalent this year, the long-protracted drought and absence of storms being favourable to its development. Market growers are in many cases ploughing up large breadths of winter Greens, that are so much affected as to be useless for culinary purposes. It is not often that one sees water-carts employed in November for watering Cabbage plants, yet such is the case in this locality this season, and those who have neglected this precaution have experienced great loss in the way of plants. The soil being dry as dust and a dry breeze prevailing are very trying to recently-planted crops of any kind.—*J. G., Hants.*

Improving shallow soils.—In this locality soil varies very considerably. It is no uncommon thing to find barely depth enough to support any kind of crop in one part of a field, and this of the lightest description, resting on a bed of gravel, and only a few yards off a good depth of vegetable soil resting on several feet of good clayey loam, such as is used for brick making. Many cultivators of such soils turn this to account by digging out pits of loam and carting it on to the light thin portions, spreading it out at this time of year like a coat of manure, and letting it lie for some weeks exposed to the winter's frosts or rains; it is then ploughed in, and is found to well repay the labour. Not only does it produce a marked and speedy improvement on the crops, but it permanently increases the depth of soil, and by this simple means alone land that a few years ago would hardly keep the scantiest herbage alive now produces fine crops of vegetables. The main thing is putting on little and often, rather than a great depth at any one time. It is surprising what fine crops fresh soil will produce without any stimulating manure; old hedgerows grubbed up, or banks levelled even where composed of soil of but moderate quality, will yield good crops for a long time.—*J. G., Gosport.*

Seakale from seed.—Although the custom of increasing Seakale by means of root cuttings has nearly superseded the older plan of raising it from seed, there can be little doubt that for permanent plantations healthy seedling plants are best. If large roots are used for cuttings they frequently bear traces of decay that in a short time spreads and eventually destroys the plant. I find, therefore, that in order to obtain good, healthy roots, seedlings have a great advantage over cuttings; they push out long thong-like roots that in the loose stony soil of the south coast penetrate to a great depth, so that even in periods of the greatest drought they find plenty of moisture. Some of the huge clumps of native Seakale growing on the shore about Southampton are of enormous size and probably of great age, and young seedlings that spring up around these old plants show extraordinary vigour even in the poorest soil. In fact, Seakale appears to grow best among loose shingly stones about which there is nothing but sand, and although this vegetable is looked on as a luxury, there can be no question that many a garden in which it is but sparingly grown could be made to yield an abundant supply. Seed sown in March in drills 1 foot apart will produce good plants fit for transplanting by the autumn, and as soon as the leaves die down is the time to do this. Many are deterred from growing this useful vegetable under the impression that a large outlay to produce it is needed; whereas it can be had in the highest state of excellence without any outlay beyond what any moderate garden can command.—*J. G., Hants.*

Hackwood Park Tomato.—Mr. Crook, Farnborough Grange, thinks this variety superior to all others; he put a plant of it in a box 24 feet by 1 foot on June 1, and it has yielded many pounds of fruit, finely formed, thin in the skin, and well flavoured. It bears its fruit in clusters consisting of a dozen or so together. It resembles Stamfordian, but is in some respects even better than that fine-looking variety.

Forced vegetables.—It has often been our practice to purchase new kinds of French Beans, Turnips, Carrots, Potatoes, Tomatoes, Radishes and Cucumbers, as well as to give a trial to any vegetables which have been grown and tested by cultivators who have reported favourably on them. The past season we have found French Bean Ne Plus Ultra to out-distance, as a free cropper, several of our old favourites, among which were Osborn's Forcing, Newington Wonder, and Canadian Wonder. Our earliest Turnip was Munich, which came into use about the middle of April, quite three weeks before the White Dutch, Silver White, Snowball, Red Stone, and some others. Munich, being tender, juicy, and not given to "bolt," is of much value for forcing. We find Milan ready for use in the open ground weeks before any other kind (Munich, being forced under glass only, is not included in the outdoor trial). Short Dutch Horn is the earliest Carrot, but we find little difference among the "Horn" kinds. Potatoes (among which are several new names) are best represented by a good selection of the old Ashleaf Kidney. Veitch's Kidney and Mona's Pride are about equally good as the first named. A number of kinds selected from advertisements are not equal to their recommendations. Of Tomatoes we gather good samples of Hathaway's Excelsior in March. But, taking all points into consideration, we prefer Acme to all others which we have yet tried. Last season we grew these very largely; none were more productive than old Large Red and Orangefield. Their corrugated forms are, however, against them. Our best Radishes under glass were French Breakfast and oval-shaped Scarlet. Early France seems less liable to run to seed than most other kinds. Cucumbers are always a very important crop, and among a number of kinds grown for trial we consider Telegraph (a true sample) to be the best. Monroe's Duke of Edinburgh fruited very abundantly, and the produce was of a very useful size. Our Cucumbers were grown in a span-roofed house, and the other vegetables just named in ordinary brick pits. I observed on a sharp ridge where a number of kinds of Lettuce were planted that Bath Brown Cos was in capital condition on June 23. Hardy Hicks and All the Year Round were also good.—*M. Temple.*

DUNSTER CASTLE.

THERE are numerous points of interest connected with this old castle, which dates, I believe, from the early days of the kingdom of Wessex. Every thoughtful person who passes through the old town stops to see its fortress, enticed thither not only from its eventful history, but by its commanding position. By all means, if possible, stroll through the grounds. The climate seems kind, and Fuchsias, Laurustinuses, Camellias, and Veronicas flourish with unchecked vigour. From a tennis lawn, which is nearly as aerial as the highest of the battlements, a magnificent view over the park, broken up with woody valleys, to the monarch of Exmoor, Dunkery Beacon, can be obtained. In the borders Pelargoniums are allowed to stand out through the winter. The view on the other side from the threshold of the iron-studded and massive oak door, the portals of which are of the time of Edward III., is over some low-lying meadows to the sea, a pleasant break being the verdurous height surmounted by Conegar Tower. On the southern wall of the castle is a very ancient Lemon tree—how old I should not like to hazard a guess. In winter it is covered with a glass framework. Lining a path, which leads from a flower garden beneath the windows, is a Yew hedge 50 feet high, and in length quite 100 yards. Are there any higher Yew hedges than this? A large-limbed, far-spreading Cedar of Lebanon stands on a ledge or platform with abrupt sides; under it is a glistening, crimpling carpet of Hart's-tongue Fern. Considering how pretty a Spruce stem looks when rising from a bed of Periwinkle or Moss, surely this is an example worthy of being copied. Many trees of Cupressus macrocarpa in all stages of growth likewise clothe the hillside on which the castle stands. The winding

paths which wind up and down are associated with Holly and other Evergreens. The kitchen garden is in four divisions in the very centre of the town.

C. A. M. CARMICHAEL.

BOOKS.

THE PLANTS OF THE ALPS.*

THIS is an interesting little book, and should be in the hands of all lovers of alpine plants. At the beginning of it those questions are discussed which occur to the mind in relation to them. Such, for instance, are the chapters on the "Alps and their Nature," "Forests and their Destruction," "The Vegetation of the Alps;" and in chapter 6 we come upon a most interesting discussion on the conditions of existence of alpine plants. Chapter 7 has to do with the acclimatisation and culture of alpine plants and the best methods of growing them. Lists of alpine plants are then given in chapter 8, with some of their chief characteristics, and the book ends in chapters 9 and 10 with some reflections upon rockeries—their construction in our gardens, the material to be employed—and with some notes on alpine gardens in general. Such briefly are the contents of M. Correvon's little book. We might select the following as a passage which gives some idea of the subjects he treats of: "Plant life in the Alps is subservient to laws absolutely different from those which regulate vegetation in general. The conditions resemble a little those of the polar regions, without, however, being identical with them. In our plains snow commences to disappear in February, and by the beginning of March field labour can be proceeded with; whereas alpine pastures remain under their white mantle until May, June, and even July. The highest summits are never clear, and there are but few spots in the sub-alpine region—those of a southern aspect and exposed to the sweeping influence of the wind—that become clear of ice for any length of time. A cryptogamic vegetation takes place, but does not make much headway." And this our author works out in a very interesting manner at some length. Under his guidance one can almost see in mountainous districts in the month of May the blue Gentian opening its brilliant petals before the sun, the golden *Potentilla* and *Primula farinosa*, and many others. But it is not so in the higher regions. Nothing is changed there; all is ice-bound as before. And this of course contracts the flowering season very much, and we see at once how the plants must be under a different set of laws with very different conditions indeed from what is obtaining in the regions below. We must be at the end of June before many alpine flowers are visible at all. This chapter we account to be one of the most interesting in the book. M. Correvon insists on the fact that the humidity of the air has a very great deal to do with the well-being of alpine plants. He says that without the vapours which permeate the atmosphere, the rays of the sun would be so strong that all vegetation would die. He then tells us that the light is so intense, that when once the plants are exposed to it by removal of the snow, they develop with wonderful rapidity. Indeed, great heat (see page 76), intense light, and a sort of vaporous veil which permeates the atmosphere are the three things on which he insists as being necessary to the life and growth of alpine plants. Into all this and several cognate considerations we have not time to follow him now. M. Correvon writes with great knowledge and love of his subject, and after the experience of many years. The chief point of importance where we cannot accept him so readily as a final guide is where he discourses on the cultivation of alpine plants in our own gardens. We do not join issue with him so much about the performance of alpine plants in their own native habitats as we do about their requirements under treatment of our own. The whole thing turns on this—we are to try to reproduce exactly alpine conditions in our own gardens, or

can we grow these plants successfully without any such attempt at all? For ourselves, we hold that it is so utterly impossible to give an alpine plant just that to which it has been accustomed, that there is no use in minutely thinking about it. Something is sure to go wrong somewhere, and it puts everything else out of order at once. Of course certain broad lines must be laid down, and one would not try to grow *Ramondia pyrenaica* in a chalky soil, nor a *Draba* in peat, but it is perfectly wonderful with regard to alpine plants how they often belie their supposed characteristics and they seem to take readily to food of which they can have known nothing before—e.g., M. Correvon writes that *Anemone vernalis* is a lover of granite, and that *A. alpina* is devoted to lime. We can answer for it that in cultivation these two plants care nothing at all for either one or the other, and *Anemone vernalis* will even flourish in a peaty soil. Our author says about *Polygala Chamæbuxus*, "This plant is very capricious. At times it succeeds well in any ordinary soil so long as it is in a shady position, while at others it is impossible to make it grow, take what care one will with it." Our experience does not accord with this. It seems to live in shade, in full sun, on the rockery, or in a common border with the utmost indifference. Then, again, a list of some *Androsaces* is given in this way:—

- Androsace lactea* L. (calc.).
- " *carnea* L. (granit.).
- " *obtusifolia*. All.
- " *villosa* L. (calc.).
- " *Chamæjasme*. Host.

Aretia Vitaliana L. (calc.).

We can only remark about this that we know where every one of these *Androsaces* are growing happily together in a sandy border, and no difference is made about their treatment at all. Space forbids that we should enlarge upon this. If we differ from the writer in some particulars, we agree with him in many more. After innumerable failures with *Aquilegia alpina*, it is consolatory to read the following: "It requires a cold, light, unctuous soil and a shady, damp position. It is apt to degenerate under cultivation; therefore it is absolutely necessary as far as possible to grow it under conditions similar to those under which it grows naturally." We only wish that M. Correvon could more fully put us in the way of doing it. It strikes us that he is sometimes incorrect in his localities for the species. Thus, the locality for *Ranunculus crenatus* (p. 144) should be Styria and Patra Carpathians; for *R. amplexicaulis* the Pyrenees; for *Arabis vochinensis* should be Carinthia and Carniola; *Geranium macrorrhizum* should be Carinthia; *Saxifraga Hosti* and *elatior* (really one species) do not occur in Switzerland. *Saxifraga lantoscana* is certainly not in Eastern Alps, but in the Alpes Maritimes, and down to Mentone, &c. We are glad that our author does not, as many French writers do, ignore all that is done in his subject matter by German or English writers, but quotes freely from Kerner's "Cultur der Alpenpflanzen" (see p. 118, &c.), and at p. 141 refers with approval to the "Atlas der Alpenflora" of the Austro-German Alpine Club, only just now completed, with an accompanying volume of text by Prof. V. Dalla Torre, of Innsbruck, Vienna, 1882, of 434 pp., and to Seebot's "Alpine Plants," the fourth volume of which came out last August in the English edition of it by A. W. Bennett. On the whole we are much pleased with M. Correvon's little book, and we heartily commend it to the attention of our readers. E.

Grubs in seeds.—Last winter, when overhauling some packets of *Cyclamen* seed, I found in them numbers of white grubs just like those of the cockchafer, but not a quarter of an inch in length. I naturally expected to find many of the seeds eaten, but the instinct of the insect which laid the eggs had in this case failed it, as the tough coat of the *Cyclamen* seeds defied the attacks of the grubs, which I found, on close examination, to present a rather famine-struck appearance. Had these seeds been of a soft character, they would certainly have been to a great extent de-

voured, for it was by the merest chance that I looked through them, and I may add that there were some in every packet. When I gathered the seeds I laid them out in an airy greenhouse for a time, and I can only surmise that the eggs were then deposited on them and hatched later on when put up in parcels. Be that as it may, the fact is worth recording, and the moral to be deduced therefrom is that seeds should be put up as soon as ripe and not allowed to lie about. They should also all be examined early in the winter. Anything like *Primula* or *Calceolaria*, if attacked in this way, would soon be ruined.—J. CORNHILL.

FERNS.

HARDY FERNS AT ROCKVILLE.

THERE is always much of fresh interest to be seen in the collection of Ferns from various parts of the world, so carefully got together by Mr. Neill Fraser, including, as it does, several hundred varieties of British Ferns. The following are amongst the most distinct of the rarer kinds, and are all well worth growing. There are some curious forms of *Lastrea Oreopteris*; *L. O. crispa*, a crested form (raised or found wild by Mr. Barnes, of Milnethorpe, in Westmoreland); *L. O. coronans*, a much crested and curled form; *L. O. Baylicæ*, very finely cut and distinct; also other forms differing less distinctly from the type. A form of *Lomaria Spicant*, with each frond divided into four parts, is very singular; it is one of Mr. Barnes's varieties. Another of them is *Lomaria S. coronans*, crested at the top in a peculiar way. *L. S. Smithi* has extremely narrow and almost undivided fronds, and *L. S. Aitkeniana* is a much-branched variety.

Amongst the most distinct forms of *Polystichum angulare* is *P. a. ramosissimum*, a very dwarf-crested and highly divided form; *P. a. conjestum*, hardly 3 inches high, very dense, and curled; *P. a. cristatum*, a much less rigid form than the type, and well crested; and *P. angulare Pateyi*, with very feathery fronds. *Pteris aquilina grandiceps* is a most singular form, and there is a dwarf form of the Holly Fern, dense in habit and very prickly, and a crested form of it found by Mr. Fraser on the Grampians almost without prickles, and the only specimen of this kind that has been found wild. There is a form of *Asplenium Trichomanes* found by Mr. Fraser near Killarney which sometimes grows 14 inches high. *Lastrea Filix-mas Stableri*, 4 feet to 5 feet high, resembles a large *Pindari*; *L. Filix-mas crispa gracilis*, an old, but rare variety, is very dwarf, and the leaflets much recurved. *L. Filix-mas ramulossima* is hardly 3 inches high, much divided and crested, and a form much resembling it, *Athyrium Filix-fœmina ramosissimum*, is equally distinct. *A. Filix-fœmina Edwardsi* is like *A. Filix-fœmina Simpsoni*, but not quite so dwarf. The curious form *A. Filix-fœmina Frizelli ramosum* is grown in this collection, and also part of the original plant of *A. Filix-fœmina Victoriae*. There is a splendid mass of *Polypodium alpestre* with fronds about 3 feet long, very feathery and graceful. Amongst foreign Ferns are three from Madeira—*Lastrea elongata*, like *L. Filix-mas*, *Polystichum frondosum*, and *P. drepanum*. These have proved hardy the last one or two winters, the two latter kinds being very distinct and fine. *Polystichum falcinellum*, also from Madeira, is quite hardy, and equally so is *P. munitum* from North America. *Polypodium hexagonopterum* (N. America) resembles the Beech Fern, but is larger. *Asplenium fissum*, from the Austrian Alps, is rather like the Parsley Fern. *Cystopteris alpina*, a finely-cut form from the Engadine; *Lastrea marginalis*, a feathery kind with the fructification near the margin of the lobes; *Woodia polystichoides Veitchii*, from Japan; and a finely-cut and crested form of *Lomaria alpina* from New Zealand, probably the only plant of this form as yet introduced—all these exotic kinds are interesting additions to an outdoor fernery. *Polystichum vestitum* and *P. proliferum* (New Zealand) have shining leaves and are very effective, and

* "The Plant of the Alps," by Hy. Correvon, Geneva.

near the apex of each leaf in the latter species is one bulbil.

C. M. OWEN.

A good window Fern.—The Maiden-hair is considered by many to be the best of all window Ferns, but with this I do not agree. Some succeed with it fairly well, but it has two serious defects, viz., it does not well resist an arid atmosphere and cold draughts, and it is not strictly evergreen, as the fronds die off under ordinary room culture early in spring. None of these objections exist in

GARDEN FLORA.

PLATE 469.

EVENING PRIMROSES.

(WITH A PLATE OF *GENOTHERA MARGINATA*.)
In this important genus, which comprises a great number of useful and showy herbaceous plants, both annual and perennial, we have a great variety of form, both in stature and also in the

although most of them germinate freely in the open border, the young seedlings will be none the worse for a little protection until able to take care of themselves. The species worthy of cultivation are here grouped into four sections. The first group comprises the annuals, most of which are well known under the familiar name of Godetia,



Enothera biennis; flowers yellow (reduced).



Enothera macrocarpa (flowers yellow).

but which, according to the "Genera Plantarum," are placed under *Enothera*. Both for flower beds and mixed borders, where spring bulbs are grown, they are very useful, keeping up as they do a succession of flowers from early summer until autumn. They require little or no attention after the thinning-out process has been completed, and, indeed, unless where quality is more desirable than quantity, this is hardly necessary. For pot culture, too, they are largely used, coming in at a time when their various and bright colours are heartily welcome.

Annual Species.

E. (GODETIA) WHITNEYI is one of the showiest of this group, and useful for the greenhouse. It forms neat, compact, bushy plants, seldom more than a foot in height, and well furnished with branches; the flowers, which are rarely less than 4 inches in diameter when the plants are liberally treated, are produced in profusion nearly the whole of the summer. They are rosy or reddish coloured, have a large



Enothera taraxacifolia (flowers white).

the case of *Asplenium bulbiferum*, which is about the hardiest of all cool house Ferns, continuing to grow through the winter if merely kept from frost. It is compact, yet graceful in growth, and will live for years healthily in the same pot if kept moist at the roots. Little bulbils form on the stem, and if taken off quickly form plants. I cannot too strongly recommend this Fern to all who want a thoroughly satisfactory window plant. —BYFLEET.

Large Walnuts.—These are called in Shropshire Bauats, which is said to be a corruption of bird-nut, from some resemblance to a bird when opened. I do not know how widely this name is known, but as an established English one it seems to me better to use than either Latin or French.—C. NAYLOR, *Kerry, Montgomeryshire*.

size and colour of the flowers. Some of the species, such as *E. biennis* and others, bloom for a considerable length of time. They have large and attractive flowers, which should be seen in the "gloamin" if one would enjoy their fragrance and beauty. Plenty of sun and a light dry soil seem to be enjoyed by all the species at present in cultivation; although they will thrive for a time in heavy wet soil, the result is generally unsatisfactory. In the case of the biennial section seeds seem the easiest mode of propagation, and

* Drawn in Messrs. Paul's hardy plant nursery, Brompton, July 5.

spreading purple blotch above the claw, and golden yellow anthers. The leaves, which are oblong, are about 2 inches in length and taper to each end. It is a native of California.

E. (GODETIA) AMERCA or *roseo-alba* is also a very desirable plant, which flowers from June to August. Its blossoms, which are large, are whitish, running into rose at the base, where there is a three-cornered purple blotch. The leaves are lanceolate, blunt, glaucous, and very slightly



CENOTHERA MARGINATA.

The flowers are borne singly in the axil of each leaf or bract, spread open, and about the size of a florin, rich yellow, and having a purplish or reddish spot or blotch at the base of each petal, resembling a *Cistus* or *Helianthemum*. Flowers from June often until September. It is the *OE. heterophylla* of Nuttall.

Shrubby Perennial Species.

OE. FRUTICOSA.—In this group none are commoner than this species. Its flowers, which open in the evening, last, even in hot weather, all the next day. For the mixed border or rockwork this and its varieties, *OE. Youngi* and *OE. Fraseri*, are extremely useful, owing to their neat, sturdy habit and also on account of their flowering season, which lasts, as a rule, from the beginning of June until September. The flowers, which are freely produced, are large and showy and deep rich yellow, which is considerably enhanced by the rich colour of the opening buds. They grow from 2 feet to 3 feet in height, and have leaves varying from oval to oval-lanceolate, richly tinted or bronzed in autumn. It is a native of Virginia and Canada, and is one of the easiest to cultivate.

OE. MACROCARPA.—This species, although shrubby, has a graceful trailing habit, which makes it suitable for rockwork, where, indeed, it feels quite at home overhanging boulders or leisurely scrambling amongst loose stones. Thus situated, its large glossy blossoms show themselves off to perfection. A well-drained position should be chosen for it in the full blaze of the sun. Its stems are downy purple and very handsome; the leaves lanceolate, quite entire, and shiny, their margins being covered with a soft silky down. The flowers, which are large and bright clear yellow, are produced freely from June to September. It is a native of North America.

OE. MISSOURIENSIS is said to be a form of *macrocarpa*; indeed, it is now considered botanically as synonymous. There are no doubt extreme geographical forms of *OE. marginata*, and one of these seems to fit *OE. missouriensis*; flowers the same colour and size, and are produced at the same time. It is the *OE. elata* of Nuttall (Gen. Am., tab. 1592), and is figured in the *Botanical Magazine*.

OE. LINEARIS.—This is a distinct and handsome species, and has often been confounded in gardens with *OE. riparia*, which is quite an inferior plant. For rock gardens this plant is well suited. Being of slender habit, it often, and especially in shady positions, becomes of a trailing habit, enhancing rather than otherwise its value. In sunny borders, however, and to which it seems partial, it attains 18 inches in height, and generally upright in habit, well furnished with narrow, linear, entire smooth, dark green leaves. It bears a profusion of flowers, which begin to open early in June, extending through July into August, about the size of a crown-piece, deep shining yellow, and very handsome. Native of North and Upper Carolina. It is a perennial, and easily increased from cuttings, which should be taken in spring.

OE. RIPARIA.—It may not be out of place here, although the plant is of no garden value, to insert a slight description, which may help growers to guard against being imposed upon, even when the plant is out of flower. It grows from a foot to 18 inches, always erect, and nearly, or quite, devoid of hairs; the leaves are much broader than the above, and toothed or denticulate at the margins. The flowers, which are small and comparatively inconspicuous, are yellow, and produced on spikes. It flowers in June and July. It is figured by Nuttall in his "Genera of North American Plants."

OE. SPECIOSA.—Few white-flowered perennials are more beautiful or worthier of a place even in small gardens than this, and still fewer possess the rare quality of adapting themselves to almost any situation. Even for pot culture it is not to be despised, and it is not infrequently met with on the Continent as a bedding plant, a purpose for which it is well adapted. To make the best of it, however, it should have plenty of room in a rich,

well-drained border in full sun, or it may be placed on the top of rockeries or on sloping banks. It grows from 1 ft. to 2 ft. high, and forms compact clumps of numerous erect stems, laden with large showy flowers, which become purple on fading. They are produced from April to September, and



(*Enothera speciosa* (flowers white).)

are sweet scented. The leaves are narrow, oblong, and prettily serrated, often pinnated. It is a native of N. America. Among others belonging to this group may be mentioned *OE. pumila rosea* and *OE. serrulata*.

Stemless Perennial Species.

OE. MARGINATA (*OE. eximia*) is without doubt the handsomest species of this small group, not more than four really true species belonging to it being in cultivation at the present time. This, although reputed to be a difficult plant to keep through the winter, gives much less trouble than one or two of the others; on sloping banks or in well-drained pockets on rockwork it proves a great acquisition. It is better than *OE. acaulis*, throwing up its large blooms, fully 4 inches in diameter, indiscriminately and in great profusion from early summer until autumn. Light sandy soil suits it best, as it is very apt to damp on heavy wet places. It grows from 6 inches to 9 inches high, and has numerous soft green irregularly pinnatifid lanceolate leaves. The large pure white flowers, which when in bud are bright pink, are produced on short stalks and are very handsome. It is a native of the Rocky Mountains and also Upper California.

OE. TARAXACIFOLIA is a pretty and extremely free flowering species, suitable alike for border or rock. Planted out in the usual style in the mixed border, it is undoubtedly handsome, but it requires plenty of room and large masses to show to advantage.



(*Enothera Lamarckiana* (flowers yellow).)

It makes a fine bedding plant, and in sunny positions flowers freely from May to September. It grows from half to a foot in height, has deeply pinnatifid leaves, nearly stemless, and produces an abundance of large white flowers, fading off to purple. It is a native of Chili.

OE. ACAULIS and *OE. TANACETIFOLIA* are the other species in this group worth cultivating; the

latter is a handsome yellow-flowered species from California, quite hardy in dry positions and a free flowerer; very rare at present.

OE. TRICHOCLALYX.—This is one of the prettiest of garden plants, although unfortunately not in general cultivation. It forms at first a small rosette of deeply notched, woolly leaves, which, increasing by underground stems, form dense silvery carpets in one season, from 1½ feet to 2 feet across. The blooms, which are pure white, tinged with rose, are produced in great abundance, and they are nearly 2 inches in diameter. Flowers in July to September, and promises to be an extremely useful garden plant, never attaining more than 4 inches or 5 inches high. We think this, if protected, will prove a true perennial, although reputed an annual, as the rosettes die down or back in the same way as in *Androsace sarmentosa*. Native of Sierra Nevada, California, and Arizona.

Biennial Species.

This section of Evening Primroses includes *OE. biennis*, which was cultivated by Parkinson as early as 1630. It is very common, especially in the north, where few cottars are without it. It is perhaps the most interesting of all, especially as regards its peculiar mode of expansion. The petals are held together at the top by hooks attached to the calyx, the segments of which separate first at the bottom, whereby the corolla gains sufficient expansive power to unhook itself. When this takes place the whole flower opens almost instantaneously to



(*Enothera grandiflora* (flowers yellow).)

a certain point, and then gradually spreads out flat. It grows generally from 2 feet to 5 feet high and has erect strongly-branched stems and oblong radical leaves of a light soft green, those on the stem being lanceolate, hairy, and slightly toothed. The flowers, which are numerous, are produced all along the axillary branches as well as on the terminal spike. They are bright yellow, about 2 inches in diameter, and faintly fragrant. It makes a handsome plant for woods and wild places, where it seeds and holds its own in a remarkable manner. It flowers from June until late in autumn and is a native of North America. *OE. Lamarckiana* is larger than the above and a first-rate border plant. *OE. grandiflora* is also a handsome species, not unlike *OE. biennis*, but it has larger flowers.

OE. ODORATA is dwarfed than any of the above and a desirable plant for borders, where its deliciously scented blooms are very attractive when they first open in the evening. It grows from 1 foot to 2 feet in height, has a half shrubby habit, and long narrow undulated or curled leaves, flowers yellow on opening, but becoming purple as they fade. They are about as large as those of *OE. biennis*, and are produced in succession from April and often until August.

D. K.

Abies grandis.—I have been much interested in noticing the rapid growth of one of the *Abies*, viz. *A. grandis*. Last year's shoot was 26 inches, and I could then measure it from the ground; this year's shoot is quite as long, and the tree is 11 feet 6 inches from the ground, so it proves that it gains in height much more than the

summer shoot, and I would advise those who grow this species to make a few measurements, which would be interesting to themselves and to the readers of THE GARDEN, and I may say that a measuring pole of, say, 15 feet high, with the feet marked, will be found useful up to this height. Trees above this it might be sometimes necessary to call trigonometry to determine.—H. RICHARDSON, *Cherry Bank, Ilkley.*

FRUIT GARDEN.

THE BEST PEARS.

Now that we are in the midst of the work of planting and renovating fruit trees, a few notes upon the merits of various Pears may prove of service to some, at least, who have not such good opportunities of forming an opinion of their own as I happen to have. I do not wish it to be thought that all the sorts I shall allude to are at this time under my care, but all information I shall advance is either gleaned from present or past experience, with a few facts furnished me by most trustworthy men. According to my ideas, Pears are the most valuable hardy fruit we have, and well repay for any extra pains that may be taken with them. Pyramidal trees under certain conditions very frequently produce excellent crops of fruit, but, as a rule, it is the wall trees that yield much the best fruit, and these especially that repay for renewing root-pruning and various renovating measures as well as protection in the shape of blinds or mats when in bloom. So much do I value the walls for Pear culture, that I would go the length of destroying many Peach, Nectarine, and Apricot trees that in many positions are frequently failing, and would devote the space they occupied, and which is always the best in the garden, to Pear trees. The season of Peaches and Nectarines is a short one, but with Pears the case is very different, as it is quite possible to have these in good condition from August to April. Not a little, however, depends upon a suitable selection being made to assist in this, and it is this object that I have in view. If asked to state which I considered the best flavoured Pear in cultivation, I should decide in favour of Winter Nellis, but unfortunately this is one of the smallest sorts we have, and small Pears, like many other small fruits, do not find much favour now-a-days. As it happens there are plenty of fine sorts that are also very good in quality, and it is of large sorts that I will first speak, taking them somewhat in their order of ripening. The Jargonelle is a general favourite, and it is a most delicious early variety. This season, though not at all plentiful, many of the fruit have been exceptionally fine. It is very difficult to grow as a pyramid, owing to the habit it has of forming only a few extra strong pendulous branches, and these same branches are also liable to be blown off standard trees. Fan training, a warm wall, and occasional root-prunings best suit this style of tree.

BEURRE DE L'ASSOMPTION is a remarkably fine early sort, ripening late in August and of the very best quality, but does not keep long. I have seen and had it equally good on cordon, pyramid, and wall-trained trees and on the Pear and Quince stocks. It is not advisable to grow many of this sort, but at least one tree of it should be included in every collection. Souvenir du Congrès very much resembles Williams' Bon Chrétien, and those who happen to be fortunate enough to have the latter in good condition may well be satisfied with it. We have the Bon Chrétien in three different sites, and this affords a long succession of this delicious, but bad-keeping variety. The finest fruit I have yet seen of it were grown on an old standard tree in Kent; plenty of them weighed one pound, and were, as may be imagined, of delicious quality. Beurré d'Amanlis with us generally bears well either as a pyramid, cordon, or espalier, ripening late in September, and the fairly large and not very tempting-looking fruit are of excellent quality. Grown on some soils the quality is poor, and I have never yet tasted it good from

an east wall. Beurré Superfin is a great favourite with me. It is a free grower without approaching grossness, and can easily be formed into a particularly handsome pyramid, but the fruit are considerably finer on the wall trees. It seldom fails to bear well, and when ripe, late in September, the fruit are most delicious, having the firm buttery-like consistency of a Glou Morceau with the briskness of a Louise Bonne of Jersey. No collection can be complete without it.

DOYENNE BOUSSOCH is a grand-looking sort and seldom fails to bear well. Our only tree is an obliquely-trained triple cordon, and as far as weight of crop is concerned is the most profitable tree we have. The fruit must be eaten in about three days after they are gathered, or otherwise they soon become mealy and worthless. It ripens early in October, but is scarcely to be commended unless the grower happens to be an admirer of fruit more for their fine appearance when growing than for their good quality. Beurré Hardy, though seldom attaining a large size, is yet a valuable sort. It is free growing, and can soon be formed into handsome horizontally or pyramidally trained trees, is a good bearer, ripens late in October, keeps fairly well, and is of excellent quality. Brown Beurré, another October Pear, I have seen particularly good in every respect when given the benefit of the shelter of a west wall, but have never met with it really good on any other site or as a pyramid. The quality of well-grown fruit is very good, and it may well be given a trial where variety is preferred.

LOUISE BONNE OF JERSEY I consider the most handsome Pear grown, and still one of the very best sorts we have. It is perfectly distinct in every respect, forms a handsome pyramid, and on the walls appears to do well, whether the position be hot or cold. It is a prolific variety, and if properly thinned out will grow to a good size; colours up beautifully, and when ripe about the middle and the end of October is peculiarly distinct and of good quality. So also is the good old Bishop's Thumb, and in addition it is a better keeper, though as far as appearance goes it has not much to recommend it. I have never yet seen a young tree of this variety, but a very old tree seldom fails to bear well, and we like it sufficiently well to graft a standard tree of an inferior sort with it.

It may be thought that I have enumerated enough October Pears, but Marie Louise d'Uccle does so well as a pyramid, and which cannot always be said Marie Louise, that I should strongly advise lovers of pyramid trees to give it a trial. It is a good cropper and of excellent quality. Marie Louise is everybody's Pear, and a better sort it would be difficult to point out. In Sussex I have gathered it in good condition from a north wall, and here we usually have it good from trees on a wall with a north-east aspect. By planting in different aspects it is possible to have fruit fit for table from the middle of October till near the end of November, but not this and similar seasons when so many sorts are either very scarce or ripen much earlier than usual. Doyenné du Comice is a good companion for the Marie Louise, as it ripens and lasts about the same time, and is distinct, though equally good in quality—at least, in some people's estimation. A friend of mine has remarkably handsome pyramids of it, and seldom fails to secure a crop.

GANSEL'S BERGAMOT, though extensively grown, is scarcely worthy of it. We have it on a west wall, and also on a rather colder site, but in neither does it do well, and the fruit, though fairly large, is gritty and poor in quality. Beurré Diel is grown in nearly every garden, and deservedly so, as it is very hardy, may be grown in any form, seldom fails to bear well, and the fruit, which are fairly large, are usually of good quality. Undersized fruit are oftentimes unfit to eat, and thinning the fruit should be resorted to pretty freely. Beurré Bosc, which ripens about the same time, is not so robust, and this, too, is apt to be gritty and rather poor in quality. Thompson's I have seen much of, and both as regards appearance and quality of the fruit should

say it closely resembles Urbaniste. The latter forms an excellent pyramid, but I am only acquainted with one place where it is grown, and in this case it is much appreciated. It is not a large sort, but is certainly much superior to several other sorts that are extensively grown. Maréchal de la Cour is a grand sort; the tree possesses a good constitution, and does well either as a cordon, pyramid, or wall tree. It is a good bearer; the fruit are extra large, ripen early in November, sometimes earlier, and are of excellent quality. What applies to this variety applies equally well to Van Mons Leon Leclerc, with this difference only that this grand sort ripens rather later. Pitmaston Duchess again is another remarkably fine variety, the fruit sometimes attaining a weight of one pound and upwards, the quality being first class. This may be said to be a November Pear, and should be extensively planted, as it succeeds nearly everywhere and in any form or position. It is perfectly distinct from the better-known and certainly much inferior Duchesse d'Angoulême, and if it does not actually replace the latter, it ought to receive the preference. Duchesse d'Angoulême forms a good pyramid, and seldom fails to produce good crops of very fine fruit, which, however, are not of good quality, being coarse in texture.

BEURRE CLAIRGEAU, if given a good west wall, will generally bear well, and its very fine fruits colour prettily, and are of fairly good quality. This season the quality is better than usual. With us it is usually in season during November. Hacon's Incomparable is a very serviceable variety, and not so much grown as it deserves to be. I have seen very fine trees of it in several Berkshire gardens, and it seldom fails to bear well. It makes a good orchard tree and a fairly good pyramid. The fruit is of medium size, though this year it is above medium size, and it is good during November and December. Huyshe's Prince Consort does not attain its full size with us, but it is valued nevertheless, as, like other varieties raised by Mr. Huyshe, it is of good habit and quality, and seldom fails to bear well. With us it ripens by the middle of November, and keeps good for some time. Like Huyshe's Victoria, which ripens a month later, it is a good firm-eating Pear, and both do well as pyramids.

GLOU MORCEAU is too well known to need many eulogistic remarks from me. It is rarely good on a pyramid, but on walls the trees seldom fail to bear well, and the fruit are of good size and excellent in quality. It is one of the "buttery" Pears, and keeps good till the end of December. It is ripening earlier than usual this season, and with us was in use by the middle of November. General Todleben is a very large sort, and forms an excellent pyramid, but the quality is best from wall trees. It bears well, ripens in December and January, and sometimes, but not always, is of very good quality. The flesh has a rosy tinge, and is very different from any other sort I am acquainted with. Beurré Bachelier must also be classed as a very fine sort, and the fruit, which ripen early in December, are firm and good in quality. I have not seen a good pyramid of this variety; the finest fruit, and which weighed one pound each, I have yet handled were gathered from a young wall tree growing on a west aspect. Lovers of fine sorts should grow Beurré Bachelier. Beurré Rance is, perhaps, the most valuable late Pear we have. It succeeds almost under any kind of treatment or method of training, and I have seen very heavy crops on orchard trees. Its season is said to be from February to May, but it too often ripens earlier, and, as a rule, may be said to be fit for use from late in December till March. Easter Beurré is another general favourite, and on the wall trees especially it seldom fails to bear heavily. I do not think highly of its quality, but it is available when Pears are usually rather scarce—viz., from January to March. There are several good

SMALLER SORTS OF PEARS, and to these I will allude as briefly as possible. Citron des Carmes, a small green-skinned sort, and one of the first to ripen, is a good bearer, and for a short time

fairly good in quality. Comte de Lamy is well adapted for growing either as a standard or pyramid, bears well, and ripens about the middle of October. The fruit are rather small, but very good in quality. Jersey Gratioli also does well as a pyramid, crops well, and the medium-sized fruit, as a rule, are very good in quality. Passe Colmar I have only on walls; it is a good bearer, and the fruit, medium in size, are very delicious in November and sometimes later. Althorp Crassane does well in the open, and some of the best and most prolific pyramids I have yet seen are of this variety. In this same garden none but the hardest sorts and those on the Pear stock would thrive. The fruit of Althorp Crassane are rather small, but they are good in quality, and frequently available from October to the middle of December. Napoleon in some gardens grows to a fairly large size, but, as a rule, it is rather small. I have only seen it against walls, and on our cold soil it is a failure. The smooth green fruit are very distinct and fairly good in quality; in season during November. Beurré d'Aremberg is decidedly valuable, especially for open ground culture. It makes a good pyramid, and rarely fails to bear well. The fruit are rather small, but are very good at Christmas and sometimes later. Winter Nelis is best grown against walls and on the Pear stock. It seldom fails to bear well, but of late years it appears to have changed its season, as, instead of being a midwinter variety, it is now generally fit for use not later than November. Knight's Monarch is a profitable late sort and bears well under any treatment. It is a good midwinter sort, but as a rule is rather small. Bergamotte d'Esperen I consider the best small late sort we have. It makes a good pyramid, is very hardy and prolific, and is fit for use during February and March and sometimes still later. Ne Plus Meuris is a remarkably hardy sort, and ought perhaps to be classed as a large sort, as unless the fruits are of good size there is little besides core in them. The fruit requires to be freely thinned, especially the large clusters that frequently form. Its long keeping is its best property with us, but I have tasted fruit of it that have been of excellent quality.

W. I. M.

WINTER DRESSING FRUIT TREES.

Now is a good time to undertake this important operation, not only because there is usually more leisure time for such work early in winter than at any other time, but because if mild weather prevails the buds get excited and begin to swell up directly the shortest day is over, and then the risk of injury is greatly increased, for any kind of dressing sufficiently strong to kill insects, though safe while the buds are dormant, may cause them to drop off when ready to burst, or imperil their vitality. When frosty weather prevails advantage should be taken of it to push on this work. I am frequently called on by owners of orchards to examine their trees and tell them why they fail to carry good crops. In many cases I find the bark completely covered with scale fixed so tightly as to appear like part of the trees, and their owners can hardly comprehend how such harmless-looking mites can possibly throw trees into ill health; but when it is considered that their very life is being slowly sucked out of them by these apparently insignificant insects it will be readily understood that trees cannot possibly thrive. For scale, American blight, or, in fact, any of the insect pests that attach themselves to the bark or remain in crevices during winter, I find soap-suds syringed over the trees in frosty weather one of the best of old-fashioned remedies, and one that costs little beyond the labour of applying it; but for thoroughly clearing trees, not only of insect, but parasitic plant growths, nothing is equal to paraffin oil mixed at the rate of half a pint to a gallon of water. This will clear off insects, Moss, and Lichens, and leave the bark clear and shining—a proof of good health. The only difficulty in applying paraffin is to get it thoroughly mixed with the water. I find it best to use warm water at from 80° to 90°, with a little soft soap in it worked up to a froth by

stirring it sharply; then add the paraffin, and apply it with a syringe or garden engine, so as to wet every branch and spray affected. As a rule, the young wood is pretty clear from such pests, and by operating every winter on the main branches of any tree badly affected, the worst cases will soon be overcome, for as the trees regain healthy vigour they are enabled naturally to divest themselves of these troublesome pests. A dressing of limewash on the stem and branches of standard trees will destroy Moss and Lichen, and some fine powdered lime dusted over the twigs on a calm, damp day will clean the young growths; thus by a little timely attention many an apparently worn-out orchard may be restored to health and vigour.

J. GROOM.

Gosport.

EXPERIMENTS IN VINE CULTURE.

WITH a view to test the theory that white Grapes should not be used as a stock for black ones, I, a few years ago, inarched Mrs. Pince on Foster's Seedling and another on a Black Hamburgh, with the result that there was no difference between the two either as regards size or shape of the bunch or colour. From what I had read I expected to see the rod which was worked on the white Grape produce very indifferently coloured berries, because it is an accepted theory that the stock would influence the scion to such an extent as to change its character, but such is not my experience.

Horizontal training of the old rods I do not recommend when it can be avoided; not that the Vines do not grow and fruit as well, but because there is considerable danger of breaking off the young lateral growths when getting them down into their places. The growth on the upper side of the rods may be readily dealt with, but very great care is necessary in dealing with that on the lower side. We find it necessary to allow the shoots to extend until they get 2 feet long, as by that time they get harder, and do not break off at their base so readily as when younger. In any case, they must be brought down a little at a time until finally fixed where they are wanted. It should be remembered that every shoot broken off is not only the loss of a bunch of Grapes that year, but the loss of the spur altogether. To avoid the latter contingency, none of the other shoots should be removed from the spur until it is quite clear that the one which is to remain is reliable; that point settled, no time should be lost in removing the others.

Double-rooted Vines I find to be no gain. This matter has been well tested here in a large house in which three Vines are growing and trained horizontally. They are planted at one end, and the tops are brought down on the other side and rooted in the border there. So far as I can see, we have not been benefited to the extent of an additional pound of Grapes, although they have had the benefit of two sets of roots for these past five years.

Growing pot Vines in leaf soil only has been a hobby of mine. I potted two plants in 16-inch pots, and fruited them the next year. I found the first year that I got very short-jointed growth, but very small canes; the next year every bud produced a bunch, but it was weak, and consequently the bunches were small. The only satisfactory point about the experiment was that the berries coloured well and the flavour was excellent, but the quantity of water which the plants required was considerably more than when Vines are grown in a heavier compost. For dinner-table decoration I made several attempts to induce Vines to make all their growth on wire frames, on which they were to be sent to table, but I signally failed. I found that the only satisfactory way was to grow them on vertical wires, or stretched under the roof of the house as permanent Vines are grown, and when ripe to fix them carefully on the wires.

J. C. C.

5282.—**Select Peaches.**—Allow me to recommend your correspondent (p. 450) the following as the best varieties for the respective seasons

and purposes he mentions—Six best early varieties suitable for pot culture: Early Louise, Early Grosse Mignonne, Hale's Early, Early Rivers, Early Alfred, and Dr. Hogg. Six best early varieties for outdoor culture: Early Beatrice, Early Louise, Hale's Early, Grosse Mignonne, Dr. Hogg, and Noblesse. Six best mid-season varieties for outdoor culture: Royal George, Stirling Castle, Barrington, Belle Beauce, Crimson Galande, and Bellegarde. Six best late varieties for outdoor culture: Prince of Wales, Violette Hative, Late Admirable, Lord Palmerston, Walburton Admirable, and Salway. From these lists the following may be selected as the very best varieties, viz.: Hale's Early, Dr. Hogg, Grosse Mignonne, Stirling Castle, Noblesse, Bellegarde, Prince of Wales, and Walburton Admirable.—W. C. T.

Apples at Sherborne Castle.—Mr. Pragnell, the well-known gardener at Sherborne Castle, is an enthusiastic and experienced pomologist, and, among other matters, has succeeded in forming a good collection of Apples. They are grown principally as cordons, and very rarely does he fail to secure good crops of fine fruit. A list of the sorts which he has found to be the most prolific this season, all of which are considered valuable, especially for storing, should be instructive. Among dessert varieties the best are Robinson's Pearmain, Lord Burghley, Cornish Aromatic, Cox's Orange Pippin, Adam's Pearmain, Loan's Pearmain, Claygate Pearmain, Fearn's Pippin, Dutch Mignonne, Brickley Seedling, and Egremont Russet; while good culinary sorts are Golden Noble, Beauty of Kent, Cox's Pomona, Annie Elizabeth, Warner's King, Lemon Pippin, Winter Majetin, Alfriston, Devonshire Buckland, Lady Henniker, and Dredge's Fame, the last three being also available for dessert.—W. I. M.

Pine growing at Castle Hill.—There is here such a magnificent display of Pines, that a few notes on their culture may be useful. The house in which they are grown is a semi-span 160 feet long, and is divided into five divisions. With the exception of the roof, it is double glazed all round; this, of course, is to keep draughts of cold air from rushing in and to prevent the hot air from escaping. There are ten rows of pipes, four of which are used for bottom-heat. The pots stand on stone slabs, which rest on hot-air chambers, and packed around them is tan to a depth of 14 inches. The average temperature is 80° at night, 95° by day; the bottom-heat ranges from 75° to 80°, but is lowered in winter. Great stress is laid on the matter of watering, particularly as regards the temperature of the water, every pot of which is tested with a thermometer; the water is first boiled and then cooled to the required temperature. Too much moisture is studiously avoided. In summer the plants are watered once a fortnight, in winter hardly at all. From this non-pampering treatment, they are sturdy and not drawn up. The manure used is deer droppings, which are kept for a month or six weeks before being used. Finally, air is only given when the temperature is 95°. The Smooth Cayennes average over 7 pounds, and one I saw, which was afterwards exhibited, weighed 9 pounds 10 ounces, and there was a very strong sucker on the same plant. As regards propagation, a wooden box is filled with 3 inches of soil; in it is laid horizontally a sucker, and another 3 inches of soil is then added. The leaves being cut off, fresh suckers burst from the joints, and in some instances as many as seven can be obtained from this one sucker. These are then twisted out, potted, and plunged in sawdust, not tan.—C. A. M. C.

Apples worth growing.—I find that in my remarks the other day under this head I wrongly described the Apple Flower of Kent, and should have corrected my mistake, even had not "C. A. M. C." called attention to it. There appears to be much confusion existing in Apple nomenclature in this and adjoining districts, especially with regard to the Kentish Apples. What we have for the Flower of Kent, and which is also grown under the same name in the Bristol district, is probably Kentish Pippin or else an inferior form of Blenheim Pippin. At four important fruit shows this

season I have seen Kentish Fillbasket, Beauty of Kent, and Flower of Kent shown in grand condition, but which were rightly and which were wrongly named I have not had sufficient experience to determine. It is my belief that much of the confusion now existing as regards nomenclature is entirely due either to the carelessness or

distributed, and not a few disappointments have been the consequence.—W. I. M.

A few words about Apples and Pears.—That King of the Pippins should head the list of dessert Apples in the Chiswick Conference Report seems to me preposterous, and shows that our knowledge of fruit must after all be but limited.

Beurré Rance is put in air-tight drawers it is invariably edible. And if some of the later varieties were treated in the same way, or put in air-tight boxes in the stove ere shrivelling commenced, growers would not always be barking up the wrong tree. Since writing the note on Grenadier, I have seen that it was certificated by the Apple Con-



The fernery at St. Nicholas House, Scarborough (see p. 473).

recklessness of the nurserymen who supply the trees. If they cannot supply the sort ordered, they often send another in its place. This may appear an extravagant assertion; but if a well known and much respected nurseryman substitutes a tree of Alexandra Noblesse for Early Alexander Peach, what am I to think? I ordered two trees of Early Alexander when that variety was rather scarce, but only got one and the Noblesse. Apples and Pears have been equally carelessly

Gardeners, too, take little pains to extend it. I remember once trying to persuade a well-known grower, who had at his command every facility, to test some of the very late varieties of Pears enumerated in Leroy. Not he; he had tried Bezi Mai, Beurré de Bolwiller, and Directeur Alphand; they had never ripened, and had stood on the shelves stony and shrivelled until Pears had come again. But is it fair to treat March and April Pears in the same way as Christmas ones? If

ference. Court of Wick in the conference report is branded with being too small, but if grown on the cordon system it very often attains to what is known as "below medium size." The finest Ribstons can likewise be grown on cordons, and the trees seem to be cankerless. A third good cordon Apple is Jonathan. It has none of the outside appearance of a dessert Apple, but in April it is soft-fleshed and luscious. Stirling Castle on the Paradise, like Bonne Louise Pear on the

Quince, is apt to bear itself to death. Small's Admirable, a stronger grower on the same stock, is quite as good in quality and almost as prolific. One of the most prolific Apples, particularly on the Paradise, is a French kind named Jacques Lebel. In Scott's "Orchardist" this variety is unstintingly praised, and every word said of it there is true, yet I do not suppose more than twenty people know it.—C. A. M. C.

SEASONABLE WORK.

FLOWER GARDEN.

PLEASURE GROUNDS.—All recently planted ornamental trees and shrubs should be examined to see that they are properly staked and tied to prevent wind-waving; a good mulching will also be useful to keep out frost. Make preparations for screening and protecting tender, half-hardy evergreen trees and shrubs during a time of severe frost. Collect and remove leaves, branches, and rubbish of every kind from the lawn and pleasure-grounds in order to render them neat and tidy during winter. In places where the lawn is getting covered with Moss, a good top-dressing of lime and earth mixed and properly blended together will be useful in eradicating the latter and rendering the Grass more close and green. Clean all shrubberies and beds exposed to view from the principal walks, and in places where it is desirable to extend game covert, take advantage of the present open weather to peg down Laurels, Rhododendrons, and other shrubs for that purpose. In the formation of new walks use plenty of stones, brickbats, or other rough material for bottoming, so that when finished they may be dry and firm. In laying down turf edgings, let the turf when finished be about 1 inch higher than the gravel at the sides, but the latter at the centre of the walk should be on a level with the Grass margin. This would give a declivity of 1 inch from the centre to the sides both ways.

FLORAL DECORATIONS.

ORCHIDS in goodly numbers, as regards various species and varieties, may now be turned to good account in different ways for the decoration of the dinner table and drawing-room. In a cut state, effective arrangements may be made with a few spikes each of *Calanthe Veitchi* and *vestita*, selecting a trumpet-shaped vase of medium height, so that the well-developed spikes of these beautiful autumnal Orchids can be displayed to good advantage. Those spikes should be chosen that have but a few remaining buds to expand, as by so doing no needless sacrifice of flowers need be made. Of foliage to associate with these the following will harmonise well, viz., a few heads of *Cyperus alternifolius* of different sizes, or a shoot or two of *Pandanus graminifolius*, or a few small leaves of *Eucharis amazonica* might be used with advantage in lieu of either of the aforementioned, or, failing a supply of *Eucharis*, Ferns might be used, the best, perhaps, for the purpose being the pendent fronds of the *Goniophlebium* or *Nephrolepis*, some sorts of *Davallias*, as *D. elegans*, *dissecta*, or *Tyermanni*. A few fronds of the Maiden-hair might also be added, but would not be in themselves of a sufficiently bold character to rely upon entirely. Single flowers of *Cattleyas* or *Laelias* in specimen glasses for the dinner-table cannot be easily excelled. As a backing to these handsome exotics, one *Davallia* and two or three medium-sized fronds of Maiden-hair would be the best selection. *Cypripedium insigne* and *Sedeni* may now be had in good condition. The first-named can be cut with a good length of stem. About three flowers placed in a small upright vase with a few durable Fern fronds will last many days in good condition. The somewhat perpetual character of *C. Sedeni* in developing so many flowers from the same spike for months in succession causes one to avoid cutting any length of stem in the case of this Lady's Slipper. We break ours at the base of the flower-stalk and use them in small glasses with rather wide tops. Spikes of the Alexandrian *Odonto-*

glossum (*O. crispum*) look well in almost any form or arrangement. Lasting, as they do, a long time on the plant, it is a charity to cut them in order to ease the plant of its burden. A warm room, however, should not be their position—the coolest place free from draught will be the best, taking the precaution also to have a good depth of water in the glass which holds them. Single blooms of this and one or two at the most of *Dendrobium nobile* will be excellent for button-hole bouquets. The old, but still valuable, *Zygopetalum Mackayi* with its delicious perfume, especially under bright sunshine, may be advantageously used in like manner.

INDOOR PLANTS.

FERMENTING MATERIAL FOR STOVES.—Nothing in the shape of fermenting material has yet been found more conducive to a genial growing atmosphere than good fresh tan. And it is much better to get this in at once than to put the work off until later, for if the arrangement of the house is such as to admit of a sufficient body, say 3 feet or 4 feet in thickness, it will keep up a heat for three months. In the use of this material care should always be taken to procure it, if possible, immediately it has been taken out of the pits, before it has had time to ferment, and on no account to mix any with it that has lain long enough to get worms in it, as if these exist only in small quantities they breed in the warmth of a stove to such an extent as to become a positive nuisance by getting into the soil of all plants that are even not plunged in the material, but simply placed upon it. To destroy the worms that are sure, more or less, to have got possession of the old tan that has been in use during the preceding year, the pit, before the new is put in, should be thoroughly dusted with dry, newly-slaked lime. The work will necessitate the temporary removal of a considerable number of the occupants of the house. Advantage of their absence should be taken to scrub and clean all the glass and woodwork, and if, in addition, the brickwork is limewashed it will be an advantage. This, with the pointing of all cracks and inequalities, is essential where

MEALY BUG has been plentiful. Where this intolerable pest has got possession of the woodwork, the bars, rafters, wall-plates, shelves, and every portion should be painted over with clear paraffin, using it without stint, so as to get it well into the cracks and open joints where the insects congregate. The penetrating nature of this oil is such as to be more effectual in the destruction of this insect than any other material, and it likewise has the advantage of being so cheap as to entail little cost, even when used freely. In addition to this, if not already done, an effort should be made to reduce these insects on the plants as low as possible. There are some who, through the incautious use of paraffin, have killed or injured plants with it, who are timid at again trying it, but there is nothing to fear from its use on all smooth-leaved subjects that are at all firm in their texture, if only it is sufficiently diluted and care is taken that it is kept thoroughly mixed with the water during the time it is being syringed on to the plants. Without this its naturally light nature causes it to float almost entirely on the top, so that if the syringe or a sponge is charged from the surface it is almost certain to contain the oil in such proportion as to be destructive to the plants. For the same reason plants should not be dipped in water mixed with paraffin as, unless the precaution is taken to keep it continually agitated whilst the dipping is going on the chances are that the leaves get coated with oil in an all but undiluted condition. All this in reference to the use of paraffin as an insecticide has been often urged, yet from the injury frequently seen through its careless use the caution cannot be too often repeated. Where either dipping or syringing is to be carried out it is a good plan with any plants, the foliage of which is at all tender, to syringe them overhead with clean, warm water immediately previous to the application of the paraffin mixture. Such things as *Gardenias*, *Stephanotis*,

and others of a similar character, bearing leaves of considerable substance, may be syringed freely overhead as they stand in the houses, as the paraffin in such proportion as it is necessary to use will do no harm to the roots. A good-sized wine-glassful of the oil to a gallon of water is sufficient.

ZONAL PELARGONIUMS.—At no season of the year are these so useful as in the winter. A great number of new varieties make their appearance, yet, further than having large individual flowers, with possibly an infinitesimal difference in the shade of colour, many have little to recommend them. The double kinds possess the merit of lasting longer than the single sorts, the petals of which fall much sooner. For general purposes the bright red or scarlet with the pink and white colours are most useful. During the winter season the individual flowers are finer and the colours better brought out where a considerable amount of heat is used, but under such conditions to enable them to stand well when cut the plants require to be kept with their heads close to the glass and have air admitted continuously through the day, and in the night as well, except when the weather is severe. When treated in this way the plants will bear much more heat than is usually supposed, producing a proportionately greater quantity of flowers.

GREENHOUSE RHODODENDRONS.—There has been recently a number of fine kinds raised of the *R. javanicum* race, possessing more or less the character of flower which that species exhibits; the colours run through the different shades of yellow, with light and dark pink, red, and crimson. One of their good qualities is that with little warmth they can be had in flower almost any time through the winter, when, in addition to their merits for conservatory decoration, the flowers are useful for bouquets. This race of Rhododendrons, though good growers, are not so vigorous as to outrun the space at command, even where the glass accommodation is limited, and on this account they deserve a place in small establishments. They do not require much pot room as compared with many hard-wooded plants.

IMANTOPHYLLUMS.—Though these plants will thrive if kept continuously in a greenhouse, they succeed very well forced, and where there is a sufficient stock it is well, with a view to keeping up a succession, to put a plant or two in heat every three weeks or so, by which means there will be some in flower almost continually. The cool end of the stove or forcing pit or anywhere where they will receive an intermediate temperature is better suited to them than a strong heat. They are plants that do not soon outgrow reasonable limits; they divide readily, and moderate-sized examples are of more service than larger ones. Big plants may be broken up after they have done flowering just before growth commences, reducing them to one, two, or three crowns, keeping them in small pots as compared with such as are required for many things, and although when restricted for root room in this way, they do not increase quite so fast, still they bloom just as freely. Successional plants that are wanted to come in later should be kept comparatively dry at the roots and quite cool. There are now a number of fine varieties raised from seed, the flowers of which are marked improvements upon the older forms.

BERRY-BEARING SOLANUMS.—Where these useful decorative plants are required with their berries in a fully ripe coloured state for as long a season as possible, some cuttings should be rooted as soon in the new year as they can be got, for unless the plants are struck early they will not flower and set their fruit so as to admit of it getting coloured in the autumn. These *Solanums* vary much in their habit when raised from seed, and the best way to secure a uniform profuse-berried condition is to raise the stock from cuttings; if some of these are put in at once and another lot later on, the first will have their fruit ripe by the beginning of October, the later batch coming in to succeed them. If the plants have no young growth about them suitable for cuttings, a few of the best should immediately be put in a little warmth, where they will quickly commence

to grow; as soon as the young shoots are 2 inches long they will be large enough, and will strike in two or three weeks if put in genial warmth, after which they should be moved singly into small pots and kept on growing in an intermediate temperature until spring, stopping them two or three times, so as to lay the foundation for a close, bushy form. The small-growing *S. capsicastrum* with its slender drooping shoots is quite as handsome as the bushy habited sorts more usually grown. It requires similar treatment in every way, only that the principal shoot should be supported with a stick, leaving the side branches to droop naturally, which they will so as to form a pretty pyramid hanging down and all but covering the pot.

FRUIT.

FIGS.—By this time the trees in the early house will have been brought into a satisfactory state by frequent waterings, and the fermenting material will be gently exciting the roots, but until the embryo Figs begin to push forth, and the terminal buds show signs of breaking, no increase must be made upon the temperatures given in the last paper; indeed, should the weather become severe the minimum heats there advised will be quite sufficient throughout the present month. Syringe the trees regularly twice a day. Keep the evaporating pans filled and turn the fermenting material frequently, adding fresh leaves from the reserve as they are required, always bearing in mind that a steady warmth of 65° to 75° about the roots is at all times one of the most important points in early forcing. Give a little air at the apex whenever the temperature touches 65°, and close again before it recedes below 60°. Keep the glass quite clean and free from accumulations, which are apt to settle in the lower side where fermenting materials are used, as Figs in the brightest and best of houses cannot have too much light and warmth from above in winter, while neglect of these conditions very often fosters elongated growths, sickly foliage, and imperfectly fertilised fruit, which falls before it is ripe.

SUCCESSION HOUSE.—Where a second house is to be started to succeed the early pot trees it should now be pruned, or, more correctly speaking, thinned out, cleansed, and tied in ready for shutting up at Christmas. If scale has taken a hold, spare no pains in scrubbing and cleaning the shoots, but carefully avoid bruising the embryo Figs near the points, thoroughly scald and lime-wash the walls, paint the wires and woodwork, and finally dress the trees with a solution of Gishurst compound, 8 ounces to 10 ounces to the gallon of water. Examine the roots, and if root pruning has been neglected, the operation may still be performed by cutting trenches round the balls and filling them in with fresh compost of a rich calcareous nature. When filling in the trenches use the compost in a dry state and ram it in until it becomes as firm as the old balls which have not been disturbed for years, then mulch well with good rotten manure, and give a series of waterings at short intervals throughout the month to ensure a healthy growing state before the trees are excited.

CHERRIES.—If the trees in the early house from which ripe fruit is expected early in May, have not been pruned and cleansed ready for starting, this operation must not be delayed. Old established trees which have filled their allotted space do not as a rule make much young wood; consequently there will now be very little to remove; but good service may be done by thinning out the old spurs and cutting away barren branches where they can be spared to make room for younger growths. When this has been done, wash the trees and the trellis with strong soap water, and dress with a solution of Gishurst, 8 ounces to the gallon of water; also wash the glass and woodwork, unless the latter has been painted, and lime-wash the walls. If the trees have had full exposure to autumnal rains, the borders will be wet enough for the present, but otherwise make repeated waterings until the soil

is thoroughly moistened. Remove all old mulching and inert surface soil, and replace with good, fresh, friable loam and lime rubble if the trees are young and vigorous, and add 2 inches or 3 inches of rotten manure where they are old and require rich stimulants from the outset. If pot trees are used for the first crop or for filling up vacant spaces, get them washed, top-dressed, and ready for taking in when the house is closed about the middle of the month. When forcing is commenced do not exceed a night temperature of 40° in severe weather and 45° when it is mild. Always force with a chink of air on the ventilators, and run up to 50° or 55° with a circulation, when, as is often the case, these figures can be touched without having recourse to fire-heat or perhaps the most gentle warming of the pipes. Where Plums occupy a portion of the house, the same careful thinning of the spurs, cleansing, and dressing will apply, and the crop will come on very well under the same conditions as to syringing, watering, and temperature; but the Plum being more tardy in its later stages, the trees should be conveniently arranged for syringing, when the application of water would be highly injurious to the Cherries, or, better still, they might be grown in pots or tubs, as they could then be removed to another house to finish, when a dry atmosphere becomes indispensable to the proper ripening and preservation of the Cherries. To carry on the successful forcing of Cherries, a few healthy trees, including such kinds as May Duke, Black Circassian, Governor Wood, and Bigarreau Napoleon, should be kept against a reserve wall, where by means of annual lifting and replanting in pure loam they can be maintained in a fit state for removal to the houses at any time after the fruit is gathered with the certainty of their giving a full crop the following season.

POT PEACHES.—Where the first Peaches and Nectarines are obtained from trees in pots, such kinds as A Bec, Early Grosse Mignonne, Hale's Early, and Alexander Peaches, Lord Napier and Stanwick Elruge Nectarines should now be taken into the house and placed on the bed or pedestals if fermenting material is to be used for exciting them into growth. Avoid the use of fire-heat at first unless the night heat falls below 40°, and then apply it through the early part of the day, when air can be admitted and the trees can be syringed with tepid water to help the buds forward. Pay particular attention to the roots, as stone fruit trees are often ruined for the season by being allowed to suffer from want of water. Always apply it at a temperature exceeding that of the house and in sufficient quantity to insure a satisfactory state of the balls quite down to the drainage. Wash the trees with soap and water either before or after they are taken in. Top-dress with well-rotted manure, thin the flower-buds if, as is often the case, well managed trees of this class are so thickly set that the flowering process is likely to weaken them, and defer shortening back until the wood-buds on shy kinds become prominent.

CUCUMBERS.—Autumn-sown plants now in bearing will require liberal supplies of diluted liquid at the temperature of the bed. If in pots or boxes, keep adding light, rich turf to the roots as they appear on the surface, and renovate the plunging material when the bottom-heat thermometer indicates a fall below 80°. Keep the foliage well up to the glass, but guard against crowding, otherwise many of the old leaves will turn yellow and require removal at a dead time, when the knife should be sparingly used. Let the night temperature be regulated by the state of the weather, as nothing is gained by hard firing when external conditions are unfavourable; much, however, may be done by covering with mats or blinds during the hours of darkness, when, aided by steady firing, a minimum of 68° on cold nights will maintain progress until days become longer. On bright days run up 10° or 12°, and whenever the air temperature equals that of the bed give a chink of air to prevent it from rising higher, but not to cause a depression, as sudden depressions from this cause do more harm than a lower temperature without air. Avoid much syring-

ing if the foliage can be kept clean without it; otherwise choose the lesser evil, as good fruit cannot be expected when the plants are infested with insects, but keep the evaporating pans filled and the atmosphere properly charged with moisture by damping the walls, paths, and other surfaces with warm water of a slightly stimulating nature. Keep plants intended for later use steadily progressing. Stop the leaders when they have ascended two-thirds of the trellis, and thin out the side shoots as soon as they appear if all of them are likely to produce more foliage than can be exposed to the influence of light when fully developed. If the fruit is not likely to be wanted, remove all male and female blossoms as they appear, tie out the young growths horizontally, and endeavour to get the ridges or hills well filled with roots by frequent additions of rich, light, turfy loam in preference to forcing with stimulants a luxuriant growth which cannot be maintained when dead winter is upon us, and the plants are expected to produce fruit. Look after the weakest plants from the late sowings, as they very often come into use in the months of March and April, when Cucumbers are not over plentiful.

LATE GRAPES will require constant looking over for decaying berries. Keep the houses dry and cool, free from plants, and scrupulously clean. Avoid all sweeping or other disturbances which will set dust in motion, and have the Grape room fired and aired on fine days ready for their reception at the end of the month. Pot Vines will now stand a little more heat, particularly by day when the weather is bright and fine, but no hard and fast line can be laid down for forcing at this uncertain season, and it is always best to err on the side of low night temperatures until after the turn of the year, when time apparently lost can be redeemed without distressing the Vines. Attend to disbudding and tying out, select the most compact shows for the crop, and guard against leaving too many bunches, as an overcropped pot Vine is always an expensive failure. From this time forward more care will be needed in the preparation of the additional supplies of fermenting material, as rank steam would prove fatal to the tender foliage. A few of the strongest and best ripened Vines may now be selected from the spring-struck stock for growing into fruiting canes. Cut them down to within 2 inches of the base, and remove them to a cold house where they can be protected from frost.

STRAWBERRIES IN POTS.—Where very early fruit is a necessity, a few of the most promising plants of Vicomtesse Héricart de Thury may be taken into a light airy pit where they can be placed near the glass, regularly syringed and supplied with tepid water. If a body of fermenting material can be introduced, fire-heat will hardly be needed, at least until we have a change to colder weather, when a night temperature of 45° with a rise of 10° by day will suffice until we get over the shortest day. Where convenient pits or suitable Strawberry houses are not available, the shelves in early Peach houses and early vine-ries may be filled with plants; but this practice is not recommended, as they invariably leave a legacy of red spider, which does more injury to the permanent occupants than the ripe Strawberries are worth. The unseasonably mild weather is causing early kinds on sheltered borders to throw up an abundance of flowers, and unless they are kept as cool as possible, the same easily-excited varieties in pots will soon follow; it will therefore be well to keep the lights off plants which have been stored away in pits and to defer the housing of others until the weather becomes colder. On a dry day examine maiden plants by the margins of walks, from which next year's runners are to be obtained. Tread them firmly into the soil and feed and protect the roots from frost by mulching with rich rotten manure.

ORCHIDS.

CATTLEYA HOUSE.—Here we maintain a dry atmosphere, and the temperature reduced to the minimum. It used to be thought essential to the welfare

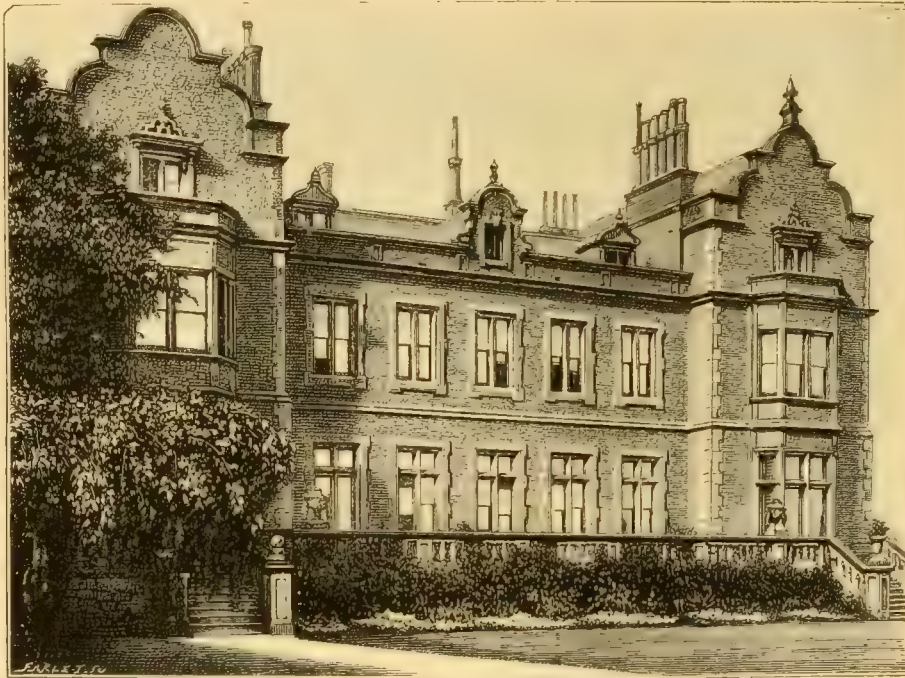
of the plant to damp up the house twice a day during winter. The best growers seldom damp up the house at all during the winter, and this with a comparatively low temperature keeps the plants in capital condition to start into growth again in the spring. A few Orchids may be potted now, or they may remain until after Christmas, with the exception of the *Pleiones*. As soon as the flowers fade or are gathered the plants must be potted, as even before that the roots are pushing out for next season's growth, and the sooner they are potted the better. *P. maculata* is the latest to flower this year; they are now (November 29) in full beauty. All the other species in our collection are over and have been potted; we use 6-inch pots, and place about nine bulbs in each; they will double themselves on an average by this time next year. They also do well in shallow pans suspended from the roof of the house. Indeed, we found that they would not thrive on the stage in the *Cattleya* house, but did well suspended from the roof with the pots placed in teak baskets. These pretty Orchids may be classed amongst the easiest grown of winter flowering plants; and as they can be grown suspended from the roof, or placed on a shelf near the glass in the cool stove, no garden should be without them. They are well named Indian Crocuses. We grow *Lycaste Skinneri* in this house, and the rather low temperature and dry atmosphere suit them at this season; they are finishing their growths, and the flowers are either open or pushing up from the base. Under these circumstances the flowers do not spot, and they last in full beauty a very long time. We found a few weeks ago that some of the leaves not fully developed showed signs of being attacked by red spider or the small yellow thrips; they were immediately washed with soapy water, to which some tobacco water had been added. Soapy water will not kill red spider unless tobacco water is used with it. The *Vandas* must also be kept in a rather dry condition; even *V. cerulea*, though producing its flowers, may not be freely watered. *Cymbidiums* are either in flower or the flower-spikes are gradually pushing out from the axils of the leaves. *C. Mastersi* is now in flower, and very beautiful the ivory-white flowers are and of a delicate perfume; they also depend more gracefully from the flower-stems than those of *C. eburneum*. The slugs seem to be remarkably fond of the flower-spikes of *Odontoglossum hastilabium*, and as they are just pushing out from the bulbs they require attention. *C. vexillarium* is now making its growth; these must be carefully watched for yellow thrips. This troublesome pest appears suddenly when it was thought not even to be present in the house. The only way to get rid of it is by dipping the plants in diluted tobacco water, and this must be done before it has time to do any injury. If we see any trace of it on any of the plants, the whole of them are dipped. *C. Phalenopsis* is frequently attacked by a small thrips, which does much mischief before it is even discerned by those who have not had much experience. This pest is also destroyed by the diluted tobacco water. Now that time can be spared from other duties, we have been looking

over the whole collection, washing them and removing any weeds that had rooted in the compost. The temperature is about 55°.

COOL HOUSE.—Except the difference in temperature, the treatment of the plants is much the same as that recommended for the others. *Odontoglossum crispum* is now to be found in the form of many flowering examples, and plants are in all the various stages of growth. If the temperature is about right the plants seem to maintain a more uniformly healthy condition when the atmosphere is on the side of dryness; they grow none the less freely, and the flowers remain in good condition very much longer in the drier atmosphere. *C. Edwardi* seems to like a cool atmosphere, and as it is making its growth must not be allowed to become dry. We do not yet know what this plant is capable of doing under cultivation; it has not yet produced spikes approaching in size those to be found on the imported plants; but as its flowers are so distinct in their rich violet-purple colour, and as it flowers in the winter, it is sure to become popular. *Oncidium macranthum* and this *Odontoglossum*

imported plants have come to hand in capital condition, the leaves green and pseudo-bulbs quite plump. We are not sure whether they are so very much the better for this; we had some *Laelia elegans* and *L. purpurata* which seemed all right, but they have not made such a growth as one would like. The new growths are weak and watery-looking, and none of them are showing flowering sheaths. It may be our bad management, but as we have had the same Orchids succeed well with identical treatment years ago, one feels inclined to ask whether it is not the way of bringing them over that is to blame. The *Pleiones* are now going out of bloom, and as soon as the decaying flowers have been removed they may be repotted; indeed, the sooner this is done after flowering is over the better. It is not necessary to repot them every year; if they are done every alternate season it would be enough. They give a greater mass of bloom the year following that on which they have not been divided. Where there is a good stock of plants it is the best plan to repot a half each year. As a rule each strong bulb will produce two. The *Pleiones* succeed well in shallow pans, suspended from the roof or placed on shelves near the glass. Pot in good turfy peat and Sphagnum, with some broken charcoal and potsherds to keep the compost open. Any Orchids starting into growth should be encouraged by being watered with warmish water. Any *Dendrobates* that may be starting to grow from the base come under this treatment. *Dendrochilum glumaceum* may be removed from this house into the East India house, and be watered freely; this species may not be so delicately beautiful as its near relative, *D. filiforme*, but it flowers at a different season of the year, and is so distinct amongst Orchids, that one cannot fail to admire it. See that all Orchids in this section that are not making their growth are kept only moderately moist; those growing or making roots should receive more.

EAST INDIA HOUSE.—We are now fairly into the winter season, and the treatment now must be such as will not excite the plants into unseasonable growth. The winter season has during the last few years been more decidedly accepted as a season of rest; consequently, the temperature in this house has not been driven to a very high point, rather letting it fall to 58° or 60° than over-driving the heating apparatus to maintain the temperature 5° higher. The atmospheric conditions have to be taken into account, as a very moist atmosphere is injurious with a low temperature, and it also acts injuriously by exciting the plants with a high temperature. There is no need to damp the house more than once a day. About 10 a.m. is a good time to do this. One of the most unique and handsome Orchids in flower at present is *Cypripedium Spicerianum*; it does best in this house, growing with the greatest freedom and flowering profusely. We have it now in flower with *C. Dominionum*, and the contrast between the two is very striking. Up to this time *Vanda Hookeri* and *V. teres* have been growing together in the lightest part of the house; they have now been removed to another house, where they have a lower temperature, and are placed



St. Nicholas House, Scarborough (garden front).

seem to require the same treatment; neither of them should get anything like dry at the roots. Most of the *Masdevallias* like a rather warmer temperature than the most of the *Odontoglossums* will thrive under; some of them have been placed in the *Cattleya* house and others are at the warmest end of the cool house. There is not much potting being done at present; but *Disa grandiflora*, if grown in this house, should be potted; the roots will now be found to be pushing and are easily injured; it is only necessary to pot those that have become too much crowded in the pots or pans in which they are growing; part the plants out very carefully. In potting, use good turfy peat, broken bits of limestone, and some sharp sand. Where we have seen the plants doing best ordinary green Moss was encouraged to grow on the surface of the compost instead of Sphagnum, and some bits of limestone were mixed in the soil instead of potsherds. This is at best an uncertain subject to deal with and does not succeed in many places.

MEXICAN HOUSE.—Just a word about fresh imported *Cattleyas* and *Laelias*. We have seen good growers pot them at once in the usual compost after washing well with soapy water, of course. Here we never use any potting material until fresh roots are formed. The pots are merely filled up with clean potsherds. During the last season or two the

close to the glass and in the full sun. They will scarcely get any water all through the winter months. The only chance to get them to flower well is by keeping them dry at the roots, as well as in a dry atmosphere. The *Saccolabiums* must also be kept comparatively dry, even to the extent of causing the *Sphagnum* on the surface to become sickly and of a whitish hue. The *Angræcums* require rather more moisture, and we do not like them to become anything like dry; they are showing their spikes, or approaching the flowering stage, and require attention to see that no slugs or other marauders attack the flower-spikes; their tips are in some cases just pushing out of the stems, and are easily destroyed. The truly handsome *Phajus tuberosus* is now in the midst of its growth and throwing up its flower-spikes; the plant seems to thrive best in a warm temperature and on a surface of fresh green Moss.

KITCHEN GARDEN.

THAT all-important affair, the weather, as regards outside garden operations, is just now all that can be desired; therefore take time by the forelock and be up and doing. Every available inch of land should now be turned over, and where manure is required use it freely. We find from many years' experience that good farmyard manure is still the best for most purposes. If *Globe Artichokes* are not yet protected, delay that operation no longer. We are now sowing *Rhubarb*, *Asparagus*, and *Seakale*. We thus keep the stock well to the front, so that we have always plenty on hand. *Mint*, *Tarragon*, and *Chives* will now require due attention. Of these we have a capital stock outside; therefore the trouble of putting in a few boxfuls is not great. Keep a sharp look-out for mice on the early *Pea* border. The old "brick and stick" traps we still consider the best. Directly the young *Peas* come up cover them an inch thick with sifted coal ashes, which will help to keep off mice and protect them from cold surface winds. *Beans*, of which we like *Green Windsor* best, should now be sown, if not already done. Young *Cauliflowers* expose fully all day, except in severe weather, shutting them up in the evening.

WORK DONE IN WEEK ENDING DEC. 2, 1884.

NOVEMBER 26.

Ten degrees of frost, and therefore just right for manure wheeling; gave *Strawberry* plots a good coating, also *cordon Pears*, the second-rate manure being wheeled on to the vacant quarters in kitchen garden. Rain and sleet setting in at noon, inside work was clearing up sheds, washing pots, sorting over *Potatoes*, the seed being laid thinly, and those for use in heaps, and covered with mats and straw as a precaution against frost. In the houses the principal work still is *Peach* pruning, washing with insect solution, tying and top-dressing of borders; rearranged plant stove, *Poinsettias* and *Calanthes* being intermixed with *Ferns*, principally *Lomaria gibba* and *Adiantum cuneatum* as a groundwork, and the effect is most pleasing. *Dracenas*, *Palms*, and *Crotons* are made to do duty as standards for dwarfier and bushy growing stove plants, with the like good effect as the preceding.

NOVEMBER 27.

Again mild, and unfortunately still dry; the rain of yesterday only amounted to 8-100ths of an inch. Leaf-carting, digging, spreading manure on *Strawberry* plots, and clearing up walks constitute the whole of our outside work to-day. House work has been watering *Camellia* border and well washing the plants with the garden hose, and afterwards arranging under the *Camellias* large bedding plants of *Agaves*, *Yuccas*, *Australian Dracenas*, and other kinds of bedding plants that are not particular as to light or position, so long as they are kept free of frost. All the best kinds of bedding *Pelargoniums* are kept in this house, and being a sort of half-show house, they are kept as trim looking as picking and neat arrangement can make them. Very

little heat can be given, but the *Vines*, with which the roof is covered, should be prematurely excited into growth, a circumstance that suits the *Camellias* perfectly, if one may judge by the vigour and long lasting of the flowers. Bedding plants generally were gone over to remove every vestige of decay, and being dry and mild, the lights were drawn quite off *Calceolarias*, *Violas*, *Gnaphaliums*, *Leucophytos*, &c. *Violets* in frames were also weeded and Moss removed from the surface of the soil, and a few *Hyacinths* and *Tulips* were put on bed in early vinery to force.

NOVEMBER 28.

Pruned *Pears*, nailed *cordon-trained* trees, and continued trenching for *Roses* and root-pruning of pyramidal *Pears*; unnailed *Peach* trees from walls, not with a view of retarding them—which I think it does—so much as to be able to give the walls a thorough wash with *Gishurst*, sulphur, and clay. This work will be done at the first opportunity, but pruning will be deferred till the middle of January. Turf levelling on ground that was once occupied with shrubs; having settled the unevenness hindered the lawn mower from doing its work so well as it otherwise would. All such jobs, though apparently trifling, by no means are so, if saving of labour by scythe mowing, prevention of injury to machine, and peace of mind on the matter to ones-self be taken into consideration. Mixing up soil for a new *Vine* border; digging turf for the foundation of the same, or rather to place over the drainage. This is of a very light description, but contains plenty of fibre, and to make amends for its sandy nature it is well pounded together. Our stiffer soil being scarce, about three layers of this lighter turf is laid in at regular intervals throughout the border, and over each layer, before it is pounded, are sprinkled half-inch bones, soot, and wood ashes. Loosed *Figs* from trellis and pruned them, our mode of pruning being to cut out all the longest and most budless shoots, just the same as is done in pruning *Peaches*, though not near so much cutting out is required, simply by reason of the frequent stopping of shoots in summer, our aim being to have the trees as full of bearing wood at bottom as at top, and this can only be assured by persistent summer pinching and selection for removal at the winter pruning of every shoot that it is possible to spare that has fewest buds near the base. Watered late *Vines* (border entirely inside), the sorts being *Alicante* and *Lady Downes*; the former seems a little disposed to shrivel, hence the watering. The border has been remulched with straw to keep in the moisture, and it also looks neater than the bare soil—an item to be studied particularly in private gardens where daily visits of the owners or their friends are made to the vineries.

NOVEMBER 29.

It turned bitterly cold again to-day, and there were indications of a snowstorm, and therefore all cold pits and frames were thickly covered up and the usual precautionary measures taken in reference to a supply of culinary roots. Harvested more leaves, swept up pleasure ground walks and flower garden, lawn, and also swept walks and roads in kitchen garden and frame ground. At this season of the year we find it next to impossible to do ought else on Saturdays; but, as a rule, such sweeping sets us free, or comparatively so, all the first part of the following week, to do other work. Indoors the work was of the usual Saturday's description, and needs not be further particularised, other than to add that in all re-arrangements and shifting of plants we endeavour to make the most of every bit of flower, first by placing the best in the most conspicuous places, and secondly, by distributing it over the house as much as possible. White and red *Bouvardias*, intermixed with sprays of *Plumbago rosea*, and underneath tricoloured bedding *Pelargoniums*, at the present time make one of the divisions of our *Melon* house gay in the extreme. At present the late-flowering *Chrysanthemums* put in their claim for effectiveness, our early *Muscat* vinery being quite filled with the following varieties in grand flower: *Meg Merrilies* and *Yellow Dragon* (Japanese), *Duchess of Teck*

(incurred), and the beautiful *Anemone*-flowered *pompone* *Dick Turpin*, all these plants have been grown in bush form, and to-day have been given greater space, to set off both plants and flowers to the best advantage.

DECEMBER 1.

Though the expected snow did not come, the more welcome rain did last evening, our register being 31°. Recent frosts and the rain of yesterday have given us our wish as to leaves, for nearly all are now down, and a beginning has, therefore, been made to-day to clear out shrubberies and every nook to which leaves have drifted. Continued levelling of lawn, planted a few *Roses*, also *Apricots*, and did a little more pruning and leaf carting. Made the first sowing of *Peas* on a border having a sunny aspect and that is well sheltered from winds; the rows are 4 feet apart and the variety *William I*. Pruned another vinery (mixed sorts), and the wood of every kind is the perfection of ripeness. The *Vines* are two years old, and have doubtless used up a large proportion of the best feeding properties of the soil. We shall give them additional supplies now in the shape of top-dressings of good loam, bones, and farmyard manure, the latter being mixed with the loam the more readily by first mixing dry wood ashes with it. I ought perhaps to add that the border is an inside one, so top-dressing can be done any time that is convenient; a thorough watering will be given before the fresh material is added. Washed *Fig* trees with a strong lather of soft soap, and to-morrow they will have another brush over with *Gishurst*. We have been bothered with a small white scale on them; hence the double washing. The lights and woodwork of the house have all been well cleansed and the walls limewashed, a procedure that we carry out with every house and pit at least once a year.

DECEMBER 2.

Rain continuously all day long. It is most acceptable to all, and to tillers of the ground particularly, who have not for many years past had to complain of drought in November. Nothing whatever could be done outside, and all our hands have therefore been employed in looking over root stores, *Potatoes*, *Carrots*, *Beet*, and *Onions*. Fruit rooms, too, have had a share of the labour, all bad fruit, cobwebs, and dirt of every kind having been cleared out. *Pears* are all ripening quite out of their usual season, *Knight's Monarch*, *Easter Beurré*, *Ne Plus Meuris*, and even *Bergamotte d'Esperen* being now quite ripe, and it is equally the same with *Apples*—*Cockle Pippin*, *Court pendu Plat*, *Margil*, and *Sturmer Pippin* being now fit for table; took lights off late *Peach* house to expose the border to the rain, for though not dry, the drainage being good, a soaking of rain will be beneficial; painted *Fig* trees with *Gishurst*, and began to re-tie to the trellis. We like to see the shoots as straight as possible, but utility is a first consideration—that is, the regular furnishing of the trellis with fruiting wood, and whenever exactitude of training runs counter to this rule, then it is given up. Washing pots, sponging the foliage of *Dracenas*, *Eucharis*, *Palms*, and *Crotons*, and picking over stock pots and boxes of bedding plants completed the day's labour.

HANTS.

Doings in the kitchen garden at Burghley.—We have just completed sowing our early border of *Peas*, which is about 150 feet by 10 feet, making the third crop with only one digging. Last March it was well manured and deeply dug. In April we planted it with *Ashtop Potatoes*, the *Wilson* variety, and lifted them in July—a most excellent crop. The very day the *Potatoes* were lifted we gave the border a rough rake over, and planted it, crowbar fashion, with *Cauliflowers* and *Veitch's Giant Broccoli*, which has given us some good serviceable heads. The ground being again cleared up, by November 12 we took out *Celery* trenches, in miniature, at every 4½ feet apart, merely taking out one spit and leaving the shovellings. We then got 20 lbs. of *Beeson's* manure,

which to my fancy beats all others; we mixed it with one good barrow-load of charred rubbish, and dug about half a peck of it to each row. We then dug up the trenches, well breaking up the soil, and drew a shallow drill down the middle of each row. In this we sowed the seed; and, here let me add, we set figure 4 mouse-traps baited with cheese, which attracts the mice, and as a rule they seldom hurt the Peas. We have also another enemy, viz., the pheasants; these we guard off by placing old Pea sticks thickly up each row.—R. GILBERT.

ORCHID NOTES.

Cymbidium Mastersi.—Of this lovely Orchid Mr. Fowler's gardener (Mr. Elliott) sends us from Ashgrove, Pontypool, a spike bearing no fewer than seventeen fine flowers. The plant from which this spike was cut is stated to be carrying two others with fourteen and twelve flowers respectively. It must, indeed, be a beautiful specimen.

Odontoglossum Alexandræ.—Has not this branched more than usual this year? In our small collection we have four plants, which have branched spikes, one with forty-five flowers and buds. Has this branching been general? and is it owing to the unusually fine summer which we have had?—GEORGE F. WILSON, *Heatherbank, Weybridge Heath.*

Odontoglossum crispum var.—What do you think of the flowers I have sent of *O. crispum*? When it first opened it had quite a blue tint. It is now past its best, having been out a long time. The spike has eleven finely developed flowers on it and the buds are large and red. I bought the plant last summer at Stevens' rooms. It is one I picked out of a large number that had a reserve price set on them. I hope to have it stronger another season.—W. H.

* * * One of the deepest tinted varieties we have seen, the colour being a rich purple-magenta, and the flower large and finely shaped.—ED.

Vanda cœrulea.—Much has been said and written as to the treatment—cool, hot, or intermediate—required by this Vanda. Mr. Curle, of Melrose, grows it to perfection in a house in which Vanda suavis and tricolor, Saccolabiums, and Aerides flourish. The plants, which were purchased some five years ago, throw up annually long spikes of beautiful flowers. It seems that when this Vanda is really well grown the flowers always come large sized and deeply coloured; at least this is so at Melrose. In the same house is a specimen of the rare Vanda vandaram (Aerides cylindricum), the finest plant perhaps in the country; it has some fifteen growths which flower every year.—A. B.

Orchids at Sunbury.—Calling at Major Lendy's garden, at Sunbury, during the week, I was surprised to find his Orchid houses gay with bloom at this generally dull season. Leaving aside varieties, I counted no fewer than fifty distinct species in bloom, and these included not a few rare and interesting kinds. The following list includes the flowering sorts except the very common kinds: *Dendrobium tetragonum*, an exceedingly curious and pretty Dendrobe; *D. formosum giganteum*, very fine; *D. Lowi*, a good variety of this uncommon species; *Cypripedium Harrisianum*, *C. Sedeni*, very dark varieties; *C. Crossianum*; *C. Spicerianum*, very fine, several plants with two flowers on a stem; *C. concolor*, with two flowers on a stem; *C. Lawrencianum*, a very fine variety; *Vanda cœrulea*, splendid dark varieties, several with fifteen flowers on a spike; *Vanda tricolor*; *Cattleya aurea*, very fine flowers, but only moderately deep in colour; *C. Dormiana*, fine variety; *C. Holfordi* (luteola), pretty and distinct; *C. maxima*, good varieties; *Coelogyne ocellata*; *Oncidium Weltoni*, the true species; *O. Forbesi*, some remarkably fine forms; *O. tigrinum*; *O. cheiroporum*; *Lycaste Deppei*, with two flowers on a spike; *Phalænopsis rosea*, *P. amabilis*, *P. Stuartiana*, *P. grandiflora*, *P. Schilleriana*; *Calanthe Veitchii*, fine in colour; *Odontoglossum Roezli*, *O. Halli xanthoglossum*, *O. madrense*, *O. Uro-Skinneri*, *O. blandum*, quite the gem of the genus; *Masdevallia tovarensis*, *M. Harryana*, *M. bella*, *Barkeria Skinneri*, *Lælia præstans*, *L. Dayana*, *L. anceps*, fine varieties and several plants bearing numbers of spikes; *L. superbiens*, with a very strong spike terminated by a huge cluster; *Epidendrum rhizophorum*, a fine plant showing

six strong spikes; *Phajus Blumei*, *Trichosma suavis*, *Burlingtonia decora imperialis*, an exceedingly pretty variety. Later on there will be a good display of *Cattleyas* and of *Lælia purpurata*.—E. S.

NOTES OF THE WEEK.

Royal Botanical and Horticultural Society of Manchester.—The exhibitions for next year will be held on the following dates: March 17 and 18 and April 28. National horticultural exhibition, May 22; Rose show, July 11; Chrysanthemum show, November 17 and 18.

A general meeting of the National Carnation and Picotee Society (Southern Section) and of the National Auricula Society (Southern Section) will be held on December 9, in the conservatory of the Royal Horticultural Society, South Kensington, at 1.30 p.m. The principal business will be the consideration of the report of the sub-committee appointed by resolution of October 14, for the preparation of rules for the government of these societies, and the arrangement of schedules for the exhibitions for 1885.

National Chrysanthemum Society.—At the annual dinner of this Society, which was held on the 2nd inst., several interesting facts were elicited; amongst them the secretary stated that no fewer than 3734 blooms were entered for competition at the late show at the Royal Aquarium; that the number of members during the last twelve months had increased from 143 to 257, and that no less a sum than £199 ls. had been paid in prizes to successful exhibitors. Special reference was also made to the important work of the floral committee during the late Chrysanthemum season, and it was also stated that the next and last meeting of this committee for this year would be held at 84, Bishopsgate Street, on Thursday evening, December 11, at seven o'clock precisely. An annual subscription of not less than 5s. entitles to all privileges as a member.

We hear that, after the publication of the next number, *The Florist and Pomologist* will cease to exist. It has lived for thirty-six years, from January, 1848, first as *The Florist and Garden Miscellany*, conducted by the late Mr. Edward Beck, of Isleworth. In 1851 Mr. Charles Turner succeeded Mr. Beck, and continued, in alliance with Mr. John Spencer, of Bowood, to direct its affairs until the end of 1860, when Dr. Hogg became its proprietor. In 1867, when it became the property of Dr. Hogg, Mr. William Paul, and Mr. Thomas Moore, of Chelsea, the title was changed to its present form, and Mr. Moore became its very competent editor, and a few years later its proprietor. Its death adds another to the many changes that have taken place in the horticultural press during the past few years. In these we have seen pass away the principal monthly magazines—*The Gardener*, *The Floral Magazine*, and *Hibberd's Floral World*. We believe *The Florist* is the last of the English monthly gardening periodicals.

OBITUARY.

A FAMILIAR figure and face will henceforth be absent from all future Rose gatherings. On Sunday, the 30th ult., Mr. HENRY FRETtingham, of the Rose Nurseries, Beeston, near Nottingham, passed away from amongst us somewhat suddenly, in the 66th year of his age. His was a notable presence at all Rose shows, especially of late years, his bright, cheery face, silvered hair, and active, robust person being noticeable, even by the least impressionable of visitors. He was a dear lover of the Rose, the chief of his powers and means being centred on its cultivation. As an exhibitor he had had a long and a large experience, and had shown side by side with all the veteran growers in the country. In the exhibition tent he was transparently honest and strictly conscientious, always setting up the best Roses he had, and that in all their natural loveliness in his best way, and trusting to their excellences to win. If fortune favoured him, he quietly enjoyed his suc-

cess; if he lost, he bore his loss with grave, uncomplaining patience. He was much in request for miles round his home as a judge, and no matter the show, whether a grand one or a small one, he never refused if he could help it; if the show was a small one with a good object, he would not go empty-handed, but would take with him, not for competition, but to add to its attractions, a box or boxes of his best blooms. He was also a very earnest fruit grower, particularly of Apples and Pears. His local knowledge of these, and what sorts were best suited to the neighbourhood, was extensive and sure; and as he weeded out unhesitatingly every variety which he found not to do well with him, planters of fruit trees, chiefly farmers and cottagers, had learned to trust his judgment with confidence. As a tradesman he was upright, reasonable, and faithful to anxiety in his business transactions. His manner of business was that of a tradesman of the old school, not caring to advertise his productions much, but rather trusting to their goodness to get him custom, so that they should speak for him rather than he should speak for them. In other and more private relations of life he was most estimable. He was an honour to the gardening profession. P.

Mildness of the season at Exmouth.

It may be worth mentioning that there is still, even at this date, a considerable amount of foliage left on the trees in this neighbourhood. The view from my residence across a park is very lovely. The rich tints of the Elms, each with a golden shadow of fallen leaves on the greensward beneath it, and the varied greens of the Oaks, ranging from the dark hues of the Turkey and of the Ilex to the lighter colours and sparser drapery of the indigenous species, serve to impart a beauty to the landscape that is seldom to be seen in this country at this late period of the year. The Sweet Peas in the open garden and the well-bloomed Gloire de Dijon Roses on the house wall bear like testimony to the mildness of the season.—J. B. P.

LATE NOTES.

Vines bleeding (A. B.)—Use Thomson's styptic.

Chrysanthemums (J. Young).—A very fine lot of blooms, fit for any exhibition, but most of them past their best.

Oil lamp stoves (J. V.)—I have used two of Bippin-gille's patent stoves for these last three years in my 20-foot long conservatory to keep out frost, and have been perfectly satisfied with their behaviour. Their management is of the simplest description.—ALICE MALCOLM, *Achnamara.*

Chrysanthemum sports (S. Knowles).—Both sports are curious, particularly that from Mrs. G. Rundle, in which half the flowers are yellow and the other half white. We never remember seeing this before in Chrysanthemums. The sport from Mad. B. Rendatler is pretty and distinct, and well worth perpetuating.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

Names of fruits.—S. C.—1, Beurré d'Aremberg; 2, Glou Morceau.—J. R.—Your Pear was quite rotten.—T.—Some cider Apple unknown to us.—W. M. T.—Pears: 1, not known; 3, Chaumontel. Apples: 1, Grange's Pearmain; 2, Fearn's Apple.—J. F.—2, Cellini; 4, Rymer.—W. Patrick.—Your Apple is Hanwell Souring, not Newtown Pippin.—T. Myers.—Your Apples were named in issue of November 22.—Others next week.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—G. Ainsworth.—*Maxillaria picta*.—H. J. Ross.—*Adiantum tenerum*; *Polypodium pectinatum*.—Hortus.—1, Davallia Tyermanii; 2, *Asplenium lucidum*; 3, *Pteris serrulata cristata variegata*.—F. H. L.—1, species of *Pteris* (send frond with spores); 2, *Doryopteris palmata*; 3, *Adiantum hispidulum*; 4, *Adiantum tenerum*.—T. M. Franklin.—*Ipomœa coccinea*.—G. H.—*Epidendrum ciliare*.

Books (C. R. Melbourne).—"The Illustrated Dictionary of Gardening," published by L. Upcott Gill, 170, Strand, London.

No. 682. SATURDAY, Dec. 13 1894. Vol XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—*Shakespeare.*

GRAPE GROWING EXTRAORDINARY.

RUMOURS of some wonderful houses of Grapes in the parish of Bracon-ash, in this county, some six miles south-west of Norwich, on the farm of Mr. J. Church, who is both farmer and gardener, led me to accept an invitation from Mr. Annis, the gardener at Keswick Hall, to go and see the Conifers there (which by the way are very fine, especially so several specimens of *Wellingtonia* and *Picea cephalonica*) and have a drive over to Bracon-ash and an introduction to Mr. Church, whom we found at home busy superintending the threshing of his corn. He nevertheless gave us a hearty welcome and courteously conducted us through his vineries—vineyards they ought to be termed from their great size. The first house entered is span-roofed, 110 feet long, 30 feet wide, 15 feet high to the ridge, and 5 feet high at the sides. It is planted with 150 Vines (all *Alicantes*) in six lines 5 feet apart, grown as standards, at first sight reminding one forcibly of a Hop garden. The four inner rows of Vines are 10 feet high, and are carrying fourteen and fifteen bunches each. The two rows next the sides of the house are necessarily shorter, about 6 feet, and have twelve bunches each—in colour, as black as Sloes, and averaging 2 lbs. a bunch all over the house. A rough calculation gives the weight near upon two tons. These Vines have been planted three years, and they carried about half this crop in 1883, or the second season after planting. This system of growing Grapes as standards, having no stakes or poles for support, but only a stout piece of wire at the top of the Vine attached to cross wires fastened to the rods, was so entirely new to me, that I was perfectly astonished and delighted, never having read of a similar experiment having been made. The strangest feature about it was to find some of the heaviest bunches (all equally black) hanging within 6 inches of the border, not solitary bunches, but on every Vine throughout the house. To my question, will the Vines continue to bear trained in this way? Mr. Church's reply was, "Come and see my other houses that have been planted five and seven years respectively." We proceeded to the next house, which is 100 feet long and the same height and width as the last. The Vines in this are five years old, and we found the crop of Grapes equally good and heavy. From some of the Vines three lateral shoots or rods had been allowed to grow to fill up vacancies where Lady Downes and Gros Colmar had been removed, these two Grapes not having proved satisfactory along with the *Alicantes*; in fact they require a longer season. Some of the lateral shoots previously alluded to had been trained to the tie-rods across the house; consequently the bunches were fully exposed to the sun, and these were the only bunches, strange to say, that were not perfectly coloured. Moving on to Mr. Church's first experiment of this style of planting where the Vines are seven years old, we found the Grapes cut and the Vines extremely vigorous, some of the foliage measuring 16 inches across. Lateral shoots or rods were here employed, as in the last house. This

house is not so large as the two preceding; it is 100 feet long, but only 24 feet wide and 11 feet high; sides, 5 feet. It was originally constructed to grow Cucumbers, but prices not proving of late years very remunerative for them, the idea occurred to Mr. Church to plant it with standard Vines—and truly it has proved a success.

Mr. Church is also an extensive grower of Tomatoes and Cucumbers, having some nine or ten houses, each 100 feet long (his favourite length) for the purpose. His method of supplying this large number of houses with warm water for syringing and watering is ingenious and worth recording. He built into a mass of brickwork 40 feet high (which answers for a chimney-stack as well) an iron cylinder 23 feet in depth and 4 feet 6 inches wide, with a furnace under it to heat the water, which is pumped into the cylinder by horse-power and then conveyed to all the houses through an inch pipe, having convenient taps placed for screwing on a hose; then by keeping up the fire and the pump going the borders can be supplied with warmed water *ad libitum*. The water used for watering is collected from all the houses into two very large cemented tanks, and if these fail in a dry season, he has a deep well to fall back on. What would gardeners give in large private establishments for a similar huge water-warming apparatus that does all the watering and syringing by gravitation? Casting a hasty look over the farm, I came to the conclusion that Mr. Church had found out how to make farming pay. I noticed large breadths of Raspberries, Strawberries, bullocks grazing in their boxes, sleek horses carting home corn for the threshing machine; but it is not given to every farmer to do likewise. Mr. Church owes his success as a farmer and fruit grower to his early training as a gardener.

WM. ALLAN.

Guntton Park.

WINTER DECORATION OF DINNER TABLES.

I SUPPOSE it is hardly an exaggeration to say that days are taken up now with this particular branch of gardening where hours formerly sufficed, and although the time can often be ill spared, it has to be sacrificed, not only for the actual work, but to devise ways and means in order to avoid the risk of sameness. It is comparatively an easy matter during summer for anyone with only a small garden to find material for the purpose, but where resources are limited there is occasionally during winter a tendency to be short of material. In carrying out the following suggestion as regards winter decoration I may say that the different subjects to be used may be found in most gardens, and the arrangement will be found to harmonise with the outdoor aspect of vegetation. An ordinary trumpet-shaped vase, with the basin and trumpet filled with damp sand, will answer for the centre of the table, and the materials for dressing this may consist of *Escallonia*, *Eunonymus*, the different varieties of *Box*, one or two fine-foliaged Conifers, *Alaternus*, and *Laurustinus*. A pyramid of foliage may be worked up with this, well feathered at the base and filled in tastily, so as to present when finished a light and graceful appearance. Similar pyramids on a somewhat smaller scale may be used if necessary towards the ends of the table. Flowers may of course be worked in at the will of the operator, but these, with the exception necessarily of the *Laurustinus*, are not essential, a pleasing effect being produced by the flowers of this shrub, and

the variegation of the *Alaternus* standing out from the foliage of the *Escallonia* and the Conifers. Small vases with flowers and foliage will be required if the table is large, and these may be filled with bronze *Chrysanthemums* or with *Primulas* with the foliage (if Maiden-hair is scarce) of the small *Marguerite*. Tracery, in some shape or form, seems now-a-days an indispensable feature on the table, and it must be confessed it is preferable to the hideous little tins that were in force some time ago. Where the stock of Fern or *Se ginella* is limited, substitutes for tracery may be found in the leaves of the *Banksian Rose*, the foliage of *Taxodium sempervirens*, or *Abies canadensis*, relieved at intervals by tiny clusters of some scarlet berry. The foliage of *Taxodium distichum* will be found to be very useful for the purpose in summer and early autumn. The design may, of course, be varied to meet the requirements of the table, but whatever it is it should in all cases be carefully executed. A little light tracery is usually advisable round each pyramid, but anything in the shape of crowding should be most carefully avoided either in the manipulation of the pyramids or in the arrangement of the vases.

E. B.

Tea Rose house at Lythe Hill.—There is now, and has been during the past month, a fine display of Tea Roses in this house; the varieties consist chiefly of the following: Catherine Mermet, Niphetos, Mdme. Falcot, Safrano, Céline, Isabella Sprunt, General Tartas, Perle des Jardins, Adam, Mdme. Jules Margottin, Mdme. Bravy, Pearl, and Marie Van Houtte. The plants are grown in tubs and pots, and are trained on round pyramidal trellises, which vary from 6 feet to 8 feet in height, and from 3 feet to 4 feet in diameter. These trellises are covered from bottom to top with buds and blooms; the plants are prepared for forcing annually, so as to come in at the shooting season, when there is a great demand for flowers, especially Tea Roses. As many as 600 are frequently used at one time on the dinner table. Some growers recommend Tea Roses to be kept indoors throughout the year, but here they are turned out in June for three months, and then after being thinned and tied in they are taken back to the house from which they came, and started into growth gradually. The house is span-roofed and upwards of 70 feet long. Pruning is only resorted to in cases in which the shoots are too long to bend on to the trellis, but thinning out all old and weakly growths is adopted. The great drawback to Tea Rose growing is mildew, which is, however, unknown here, although the same plants have been subjected to forcing for the past eight years. They all look in robust health.

—H. G.

Pruning climbing house Roses.—I have recently pruned the climbing Tea Roses in a large house, and badly they needed it, although somewhat hard thinned early in the summer just after blooming. Really when in good soil and thriving well, strong-growing Roses make such rapid growth, that the knife must be used freely, or else a terrible mat of growth soon results. I have been astonished to see, in spite of a wondrously dry season, what vigorous growth *Maréchal Niel* made during the summer; indeed, the plants then have nothing else to do but to make wood, and if the weaker branches were removed as the season advanced, giving encouragement to the strongest shoots, so much the better for the blooms next year. I have often noted the sparing way in which the knife is, or has been, used in many places where flowers are grown for sale, and have noted that grand old trees of *Maréchal Niel* have literally run to waste or comparative decay through dread of using the knife freely. There are few Roses that possess more recuperative power than this kind, and if cut back ever so hard, it will soon recoup its loss by the production

of some very robust shoots, which produce the finest blooms. Late summer prunings are to be avoided, because then the trees are encouraged to make a new growth that is neither matured nor capable of producing flowers. I am writing of Roses that are not forced, but which produce their chief blooms during the months of April and May. Very old exhausted shoots should be clean cut away the moment the bloom is over, and thus ample time is given to reproduce fine robust shoots. In the case of younger wood, a thinning of the weaker shoots in the summer and a hard pruning now is the most desirable course of treatment.—D.

ORCHIDS.

NOTES ON ORCHIDS IN FLOWER.

THE richest collections of Orchids cannot furnish a very long list of flowering plants at this season, though it is remarkable how many species are in bloom just now in the various collections about London, owing to the absence of fogs, which as a rule play havoc with incipient Orchid flower-spikes long before the middle of December is reached. Even now, however, the Orchid houses in Mr. B. S. Williams' nursery, at Upper Holloway, can furnish a tolerably long list of showy species in flower, and these include many of exceptional interest, among them being the following: The white-flowered variety of *Dendrobium bigibbum*, called *candidum*, though not absolutely pure white, is nevertheless a lovely Orchid, the flowers being flushed with a soft tinge of pink, a colour which everyone admires. Except in colour, it does not differ at all from the original, which may be seen in flower in the same house. The large *Cattleya* house is deliciously perfumed by fine flowering specimens of *Trichosma suavis*, a modest looking Orchid so far as colours goes, in fact, dull and unattractive; but it is indispensable on account of its sweet odour. The flowers are like those of a small-flowered *Coelegyne*, ivory-white, striped with dull red and yellow. It is leafy in growth and bears its spikes above the foliage, from five to eight blooms being on a spike. Two notable *Zygopetalums* are in bloom—*Z. rostratum* and *Z. Clayi*. The former, till lately so rare, is very handsome; the flowers are very large, and have a broad, heart-shaped lip, pure white, the sepals being tinged with green; it can, however, only be recommended to the connoisseur. On the other hand, *Z. Clayi* is everybody's plant, it being not only showy, but of the easiest culture and almost perpetual-flowering. It is one of the beautiful hybrids obtained from *Z. maxillare*. It bears tall, erect spikes of flowers, having broad lips of the brightest purple, beautifully marbled with a deeper hue. It is one of the most useful Orchids one can grow for winter blooming. Two other valuable winter-flowering Orchids are also grandly represented here; these are *Maxillaria grandiflora* and *M. venusta*. Both of these bear large white flowers of that wax-like texture and purity which are so much sought after for cut-flower devices. The fact that they are easily grown in a greenhouse temperature renders them peculiarly adapted for growing with other kinds of plants. Both are, moreover, extremely floriferous, and their flowers last for weeks in perfection, whether on the plant or cut in water. The *Calanthes*, perhaps, contribute most to the gaiety of the Orchid houses at this season, among them being some newly imported kinds, which appear to be distinct from the ordinary *C. vestita*, and bear more resemblance to the later flowering *C. Turneri*. In the *Cattleya* house there is not much bloom, save *C. maxima* and *C. Warscewiczii* delicata, but the *Lælias* of the ancesps forms promise to be exceptionally fine this year. Already there are several in bloom, which include the Barkeri superba variety, unquestionably the loveliest of the dark-tinted forms, and far superior to the ordinary Barkeri, the colour of the labellum being several shades deeper. Another form nearly resembles that named *Percivaliana*, there being a good deal of white in the labellum bordered with crimson. The true *L. pedunculata*, the

one with the dark crimson centre, has been flowering for some time, and still continues in bloom. Some lovely varieties of *Lycaste Skinneri* may be seen in bloom, those named *delicata* with flowers faintly flushed with pink, and *purpurata* with deep crimson-tinted lips, being the most remarkable. The singular, though not showy, *L. lanipes* is bearing crowds of its greenish white blossoms. Among *Cypripediums* the most attractive are the varieties of *C. insigne*, named *Maulei* and *Chantini*. Of the latter there is a grand specimen with fourteen spikes. Seen side by side, the difference between these two forms is plain, *Chantini's* variety, also called *violaceum punctatum*, being the best.

The *Odontoglossum* house contains a deal of flowers considering the season, there being crowds of spikes of *O. crispum*, *O. Pescatorei*, *O. Rossi*, *O. Andersonianum*, and others, including the new *O. adspersum*. If fogs keep off there is every promise of the present winter being an exceptionally good one for flowering Orchids, as the plants got thoroughly ripened during the past hot summer; the *Cattleyas*, *Vandas*, and other Orchids of a similar nature are in the most vigorous health in this nursery, chiefly owing to the exceptional summer and autumn.

Oncidium Lanceanum.—For 50 years this superb Orchid has been in cultivation, and even now it is unsurpassed in its way, for no other *Oncidium* is so beautiful in flower or so handsome in growth. The long and broad pale green leaves speckled with dark spots is a peculiar characteristic, and this, together with the absence of pseudobulbs, distinguishes it from other species. The flower-spikes are erect and generally stout and branched, so as to form a panicle of numerous blossoms. The flowers are large and showy, the lips being of a beautiful violet-rose, while the sepals are yellowish green and copiously spotted. It is now finely in flower in Messrs. Veitch's nursery, Chelsea, where it is one of the chief attractions of the Orchid house.

Increasing Phalænopsis by means of roots.—I have a plant of *P. Stuartiana*, which this season produced six young plants on two of last year's roots, overhanging the basket. Some of them have now got leaves over 1½ inches long, and have attached themselves to the spars by their own roots. On examining them the other day, I found that parts of the old roots, which were covered by the growing *Sphagnum* near the parent plant, were quite gone; even the wiry centres were decayed, and had evidently been so for a considerable time. I am inclined to think that my young plants are root cuttings. Has any of your correspondents observed *Phalænopsis* do so before?—M. MACDONALD, *Woodlands House Perth*.

Cymbidium affine.—This lovely Orchid, so rarely seen in even the richest collections, has been in great beauty in the Royal Exotic Nursery, Chelsea, during the past few weeks. It bears a great resemblance to *C. Mastersi* in habit of growth, as well as in the size and shape of the flowers, but it may be readily distinguished by the labellum of *C. affine* being of a different shape and copiously spotted with rosy purple; the rest of the flower, as in *C. Mastersi*, is of ivory whiteness. Its delicate perfume gives an additional charm to the flowers, while the graceful foliage and pendulous flower-spikes render it one of the most elegant of Orchids. *C. Mastersi* is also a great attraction in Messrs. Veitch's Orchid houses, in which one specimen bears no fewer than six long drooping spikes of expanded flowers. Both these *Cymbidiums* are grown in the intermediate house, and whilst in flower are placed in a cool, dry house, where the flowers last a long time in perfection.

Cypripedium cardinale.—Of the numerous hybrid Lady's Slippers which Messrs. Veitch have been so successful in originating, we are inclined to place the new *C. cardinale* at the top of the list in point of excellence, for no other *Cypripedium* can compare with it for brightness of colour, except it be the hardy North American species, *C.*

spectabile, which, singularly enough, this new hybrid resembles in a striking degree. It belongs to the race of hybrids of which *C. Sedeni* may be said to be the type, and we believe that it was originated by intercrossing *Sedeni* with *Schlimi*. The flowers are about the same size as those of *Sedeni*, but different in shape and much brighter and clearer in colour. The pouch is of a deep and rich carmine-crimson, intensified towards the rim; the lateral sepals are almost white, while the upper (dorsal) sepal is white with a faint suggestion of green at this season, but in the summer flowers it almost entirely disappears. As regards colour, it can only be compared with *C. spectabile*, and it is a great gain to be able to have these bright tints infused in the tender Lady's Slippers. Belonging to this group of hybrids are *C. calcarum* and *porphyreum*, both beautiful plants. The former, together with *C. cardinale*, may now be seen in flower in the Royal Exotic Nursery, Chelsea, where also may be seen flowering specimens of other handsome hybrid Lady's Slippers, such as *C. ænanthum superbum*, one of the finest crosses of the *insigne* set of hybrids. Among species in flower are *C. Boxalli*, the true *C. purpuratum*, *C. insigne*, and its varieties *Maulei* and *Chantini*.

DISA GRANDIFLORA SUPERBA.

THIS charming Cape Orchid seems at home in a span-roofed house, with *Pelargoniums*, *Fuchsias*, *Primulas*, *Cinerarias*, and similar plants, if given the sunny side of the stage, the front ventilators being kept open on all possible occasions. In potting it I use a mixture of rough, fibry peat and loam in equal parts, to which charcoal and small crocks are added, the whole being well mixed together. I generally pot our plants some time after they have flowered and take care not to disturb the roots too much. I place them on inverted pots in saucers of water, which effectually prevents slugs from getting at them and otherwise seems to have a beneficial effect on them. In addition to the evaporation thus surrounding them, I have also great faith in watering *Disas* overhead several times a day with soft rain water. The plant illustrated in the annexed engraving I obtained a few years ago from a London nurseryman, and a very small bit it was. It is now in a 20-inch pan and has borne 95 spikes, each bearing from two to five flowers. I have had nine flowers on a spike. Several other plants of smaller dimensions are growing quite as strongly. I am very particular about crocking the pots in which *Disas* are grown, as I consider free and effectual drainage to be one of the most important points in their cultivation.

W. YOUNG.
Purdy'sburn, Belfast.

SHORT NOTES.—ORCHIDS.

THE entire Orchid collection of the late Mr. Bockett will be sold on Tuesday and Wednesday next at Protheroe & Morris's Rooms, Cheapside.

The Fallowfield Orchids.—The principal prices realised at the sale of the Fallowfield Orchids at Messrs. Protheroe & Morris's Rooms, December 9, were the following: *Cypripedium polium*, 6½ guineas; *Aerides maculatum*, 6 guineas; *Vanda Sanderiana*, 11 guineas; *Cypripedium vexillarium*, 40 guineas; *Cattleya Trianae alba*, 5½ guineas.

Zygopetalum rostratum.—This rare and beautiful Orchid is again flowering admirably in Mr. Bonny's nursery at 88, Downs Park Road, Hackney, where its culture is evidently well understood, notwithstanding that it is considered a difficult plant to manage. Mr. Bonny grows it in teak baskets suspended near the roof in the *Phalænopsis* house. By closely attending to it, as regards watering, he considers it not a difficult plant to manage. He has been most successful in establishing his importation of it.

Cattleya calumnata.—On Thursday last five plants of this new Orchid were sold at Stevens' by Messrs. Sander and Co., who have acquired the stock from the raiser. It is a lovely variety, the result of intercrossing *C. Aclandiae* and *C. amethystina*. It has large spotted flowers and a broad lip of the deepest amethyst colour. The five plants fetched respectively 23 guineas (eleven bulbs), 5 guineas (five bulbs), 20 guineas (five bulbs), 7 guineas (seven bulbs), 19 guineas (five bulbs). A figure of this Orchid occurs in the "Orchid Album" for the present month.

NOTES FROM DEVONSHIRE.

A Hellebore garden.—Combefishacre House is a well-known address to most florists. It is about five miles from Newton Abbott, which stands at the head of the Teignmouth estuary. As you leave the station you pass through the town, which is built of limestone, and is a clean, picturesque place, with villas perched on the hillsides. The roads are steep, and you ascend and descend limestone knolls, which follow each other in quick succession, gradually ascending higher and higher, with Dartmoor in the far distance crowned by its distinctive tors. After going about three miles through these picturesque Devonshire lanes, and with the lofty tower of Ipplepen Church immediately before you, you turn off to the left down a steep hill, pass under the railway, across a brook, and come suddenly upon Fishacre House, the residence of Mr. Archer-Hind. It is perched upon a steep hillside, some 30 feet above the road, the ground rising quickly behind it, and with a picturesque belvedere summer-house near the top. The formation here is old red sandstone, the fields and gardens being of a deep purple-red colour, and the soil much intermixed with pebbles in a strong red marl. The house is old-fashioned and stuccoed with overhanging eaves, and is covered with climbing Roses and many rare creepers, and it stands on a projecting knoll, with a slight valley on either side, and a brook running through the lower garden and forming a pool, upon which many call ducks were sailing about. Immediately through the lodge gate were some large clumps of *Helleborus niger altifolius*, which clearly showed that Mr. Archer-Hind's residence was at hand. The drive winds up to the house, and narrow paths are carried along the hillside, with narrow flower beds cut informally in the turf and filled with choice hardy plants. The whole may be described as a charming wild garden teeming with plants of the greatest interest. Mr. Archer-Hind is one of a few amateurs to whom we are indebted for the wholesome change which has recently come over gardening in England. His more immediate "spe-

cialité" has been the Hellebore, which he has now cultivated most lovingly for forty years, and of which he has a most unique collection. The place is peculiarly well suited to the growth of Hellebores. You may see at once, by the grey Moss which covers the bole of every tree, that the climate is a humid one. The valley, which is well

The principal Hellebore beds are at the bottom of the valley, only a few feet above the brook. A row of large rockery stones is laid along the fronts of the beds, which are filled in to their level with carefully prepared soil, sand and leaf mould being well intermixed with the natural pebbly loam. A thick band of Evergreens is beyond, so that no

wind whatever can sweep across the beds. A narrow walk winds along in front between the beds and the brook. The luxuriant growth of the plants under such conditions is astonishing, the leaves being of immense size, and the crowds of buds just showing testify to the coming wealth of bloom for the early spring. *H. antiquorum* was already in bloom, but before its time. *H. n. altifolius* was everywhere in its glory, and in this sheltered garden the flowers are almost always of the purest white, with the exception of the crown to the pistils; only a few flowers in exposed situations on the hillside showed any shade of pink in the sepals. The flowers appeared to be smaller than usual here, as they are with us in the north, owing to the dry season, but otherwise they were grandly in bloom. Our northern variety, *H. n. angustifolius*, was not very vigorous, but this was their first year after removal. I think, however, that it will be found to prefer a lighter soil than is obtainable at Combefishacre, where peat is not to be had. Beyond mixing sand and leaf-mould in the marly soil and using top-dressings of soot, Mr. Archer-Hind does not use any manure; the rich marl appears to contain all the needful constituents. This is very different from my experience with very light, black soils where dressings of manure appear to be absolutely necessary, and it will always be a most important consideration with Hellebore growers. I cannot think that *altifolius* and *angustifolius* differ in their food requirements, but they certainly do require very different treatment.

Mr. Archer-Hind has nearly thirty species of Hellebores, a very complete collection, and besides these there are large numbers of hybrids. Amongst the species are, *argutifolius*, *fœtidus niger*, *n. altifolius*, *n. angustifolius*, *orientalis*, *antiquorum*, *olympicus*, *colchicus*, *sabasicus*,



Specimen of *Disa grandiflora* supertea bearing 95 flower-spikes. Grown at Purdysburn, Belfast. (See p. 492.)

wooded, high lying, and near the sea, is yet sufficiently sheltered from cold winds, and the rich red, pebbly marl is exactly the soil in which most of the Hellebores delight, and, above all, the warm climate of Devonshire in winter, when these plants make their flower growths, completes the conditions most favourable for their successful cultivation.

kamtschatkensis, lividescens, odoratus, cupreus, torquatus, purpurascens, graveolens, intermedius, viridis, Bocconi, and the following which have the Elder scent of the latter, odoratus, o. nanus, sambuc-odoratus. This is not a complete list, but it will serve to show the wealth of this grand collection and every plant true to species and name. It is most interesting to see all these varieties side by side. Mrs. Archer-Hind is an accomplished flower painter and has drawn a series of about thirty most accurate portraits of Hellebores, which are bound in a large album. These will have a permanent value, as our species are fast becoming hybridised, and it is even now difficult to single out the true original types such as are embodied in this collection.

Hellebores seed well in this garden, and there are a great many hybrids, many of which have foliage of extraordinary size and vigour. Although there were no spotted varieties originally, there are several of the hybrids spotted, which is remarkable, and leads Mr. Archer-Hind to consider guttatus as only a variety. N. torquatus Mr. Archer-Hind considers his own Hellebore, and it has a history. He only knew of one plant of it many years ago, in the Botanic Gardens at Cambridge. On visiting the gardens one autumn, when Mr. Mudd was the curator, he found considerable alterations in progress, and this Hellebore had been covered up and turfed over. On his attention been drawn to it, Mr. Mudd had search made, and luckily the plant was found, and a piece of it given to Mr. Archer-Hind. This is the origin of the present stock. It was named torquatus because of a white ring which encircles the neck of the flower.

There are many good Narcissi in this garden, and of these N. montanus produced seed last year, which is remarkable, as it very rarely seeds in England. A seed capsule was also obtained by crossing N. incomparabilis with pollen from a flower of the new giant Sir Watkin, so we may look for some interesting hybrids in due time. The St. John's-worts flourish here in a way I never saw before. H. uralum, H. oblongifolium, and pseudopatalum form large bushes, and H. empetrifolium, trifolium, olympicum, and others were in a very healthy condition. The varieties of Cistus were also very noticeable. The beds near the house, which are cut out in the turf, are filled with rare plants and bulbs and have a quaint look, owing to the peculiar marker which is used. It is a length of galvanised wire, with a bit of wood about 2 inches long at top, painted bright yellow and pencilled—a useful and permanent marker, but a little obtrusive when the plants are not in bloom.

Iris stylosa and the pink Nerine undulata were in bloom and Acis autumnalis was just over. But what struck me most of all was the tameness of the birds. Robins, chaffinches, and bluetits followed us all over the garden, and every now and then Mr. Archer-Hind stopped and took a little bon-bon box from his pocket filled with crumbs of girdle cake. A bird immediately perched on one hand while he fed it with the other. Mr. Marks, R.A., would find this a charming subject for his pencil.

WM. BROCKBANK.

Teignmouth, Devon.

DARK DAYS IN THE GARDEN.

In these latter days of dull November, when we may fairly consider the winter to have begun—

When yellow leaves, or none, or few do hang
Upon those boughs which shake against the cold;

when the flowers have nearly all departed; when a desolate neatness prevails in our gardens and fields; when the scarlet haws and some russet foliage still clothe hedges, and the distance assumes a cold grey tint, chilly as the breath of winter—

Old December's bareness everywhere;

when shortening days and foggy mornings remind us that the end of the year approaches—then these thoughts produce a feeling of sadness. One can understand the meaning of the wailing and

regrets of the old heathen world for the death of Thammuz or Adonis, who, as we know, typified the sun.

Poets of all times have never tired of contrasting the different feelings which the advent of winter and the return of spring evoke. The true lover of his garden, undismayed at the apparent death which reigns around, sets himself in earnest to the work of preparation for a floral future. With him there is no interregnum—no intermission in his labours. If he wishes for a garden of delight in early spring and through the long months of summer, he must be up and doing now. Leaving out all greenhouse business, I will merely mention a few things which must be attended to at this season in the herbaceous garden in order to have abundance of flowers—

Whose bright succession decks the varied year.

We will suppose this garden to consist of mixed borders and shrubberies. In these latter situations, although there is not much space for flowers in summer, as they are commonly shaded by branches of thick foliage, still in spring before the deciduous trees are in leaf a good deal may be done. For instance, large clumps of Daffodils and Narcissus will flower abundantly, even in shady spots, if the soil is good, while Violets, Crocuses, Snowdrops, and Primroses of all kinds do perfectly well in shrubberies. Christmas Roses certainly require a more open space, but places may be found for them in parts of the garden less thickly planted. Amateurs and gardeners who love this peerless flower know that much of the success attending its growth and blossoming depends on never letting the roots get dry during the summer. If the season is rainless, several copious waterings and a top-dressing of good decayed manure are necessary. Pansies and Anemones always do well in mixed borders if carefully cultivated. Pansies should be divided in autumn and replanted. During the summer, dead flowers should frequently be removed and manure water given. Anemones require a light sandy soil and a top-dressing of leaf-mould. We always sow the seed as it ripens in a carefully prepared bed, and transplant late in the year to the places where the plants are to remain. These bring us to the dawn of summer, preceded as it is by the season of flowering shrubs. Hawthorns, red, pink, and white, single and double, the snowy Guelder Rose and the fragrant Syringa, Lilacs, and later on the lovely double Deutzia.

How beautiful is an English garden in May and June! One can never be tired of admiring those lovely trees whose blossoms contrast so finely with the tender green of their fresh foliage. I should regard it as a misfortune to be out of England in late spring and early summer—

When Philomel in summer's front doth sing.

The aerial concerts which then go on remind us that we are in a country where singing birds are protected and seldom ruthlessly slain. After the exceptionally dry summer, it would certainly be well to top-dress any flowering shrubs where the soil is in any way exhausted, as well as to cut off seeds. Our double Deutzias did not flower well last season, owing to the want of rain. The time of Lilies is one of the most interesting to a lover of flowers—from the Crown Imperial yellow and orange in March and April, the different varieties of Martagons and tigrinums, up to the grand Lily of the poets and old masters—the stately candidum. (We must not forget St. Bruno's Lily, a queen in miniature. It is very useful in small floral decorations.) I was much struck on reading Gregorovius' "Wanderings in Sicily" with his description of the wild Lilies growing on the heights where stand in desolate beauty those mighty remains of the past, the Greek temples of Girgenti. He walked up to the Temple of Concord on a carpet of Lilies, and in like manner he gives an account of the tall white Lilies growing in masses in the fields strewn with the colossal remains of the ancient Selinus. I looked for the Lilies when at Girgenti last April, and sure enough the plants were there; the hillsides which slope away from the temples were thickly overgrown with the leaves, but the time of flowers had not arrived.

Anything more imposing than these grand remains can hardly be imagined. The road from Girgenti, by which you reach them, winds through Olive groves and gardens of Almonds, and was carpeted in spring with the little blue Iris, while in every shady spot under overhanging Vines, masses of Maiden-hair and other Ferns peep from every rocky crevice and from the rough stone walls which divide the road from the adjoining fields beyond. These are the ancient rock-hewn walls which surrounded the Greek city of Acragas before its conquest by the Romans. These walls contain the now empty sepulchres of a vast nation; they lined the city. As you near the temples a magnificent panorama spreads out before you. Above stands Girgenti on the site of the Latin city of Agrigentum. How pearly grey is the colour of the old buildings in the soft Sicilian atmosphere! That campanile on the extreme height is the Cathedral of St. Gerlando; it occupies the site of the Acropolis. Straight across to the sea, nearly 4 miles distant, a few white houses form the Porto Empedocle, the harbour of Girgenti, named from the famous poet who is said to have taught his countrymen the Pythagorean philosophy, and to have committed suicide by throwing himself into the crater of Etna. The plain between the port and the present city is a vast garden of Palmetto, Almonds, Prickly Pear, and Vines. On a mountain near Girgenti once stood the celebrated Temple of Athene, and the long street which occupies the length of the town is called Via Atenea. No trace of the temple is left—hardly a stone, but Asphodels and Lilies cover the ground which once supported it. The temples of Juno Lacinia and of Concord both stand on a slight eminence, not far removed from each other, of yellow sandstone. They contrast finely with the unsullied blue of that southern sky and with the pale green of the surrounding hills. Even the shadows cast by their tall, stately columns are luminous. To the right of them is the blue Mediterranean. There they stand, mighty in their decay, in a sort of royal solitude—vestiges of glory long departed. Sicily is the land of flowers, and it must be a rare sight to see the Lilies in bloom. We found many lovely wild plants—two or three species of Antirrhinums growing chiefly on old walls, yellow Daisies without end, a pretty blue Gentian, and many others.

Lilies of the Valley never flower well with us in a mixed border. We find it better to have them planted in beds by themselves, where they will not be disturbed; just now we are giving them a liberal top-dressing of manure. Stocks, Wall-flowers, Canterbury Bells, Foxgloves, and Pinks of different sorts are excellent plants for a mixed border; we have just been moving them from beds in the reserve garden. When they have done flowering in summer and are cut down, we fill vacant places with Geraniums, Heliotropes, Ageratums, Petunias, &c., not forgetting to sow patches of Mignonette early in spring, which will make our bouquets fragrant for the rest of the year. A good deal of our Mignonette is self-sown; these are the finest plants. We must not forget Sweet Peas; no garden of any size should be without two or three rows sown at two different times in order to have a succession. Two years ago we sowed a thick row of Sweet Peas the beginning of July. Chilly weather came on when they were about half grown, and though they looked flourishing, they never blossomed. We did not clear them away, but decided to let them stand the winter. Protected by a tall Hornbeam hedge, they did very well, and early in May were a mass of flowers. I never had any so fine before; you could hardly see the leaves. They were grand, and kept on flowering till the frosts came. Late on in summer tall Sunflowers rear their royal heads aloft in our mixed borders; they were planted out early, watered with manure water, and carefully staked; then Japanese Anemones, with their star-like blossoms, which last till the autumn is over. I must not forget perennial Phloxes, so valuable for cuttings and lasting in flower for months. There are so many fine varieties now, that it would be well worth an amateur's while to

reserve a part of the garden for a collection of the best kinds, but they look very well in a mixed border among other things. A plentiful supply of water in dry seasons is indispensable and frequent enrichment of the soil. We top-dress ours in autumn and give manure water during the summer.

I would above all things deprecate the indiscriminate digging and forking over of mixed borders, of which some gardeners are so fond. How dearly have I often paid for these ruthless proceedings! Many are the delicate little plants which have disappeared for ever through these processes. How many bulbs have been dug up and have—perhaps forgotten, or if not, been so fearfully mangled as to render recovery well-nigh impossible. Let your spiring be done gently. When fresh things are to be planted, carefully dig a hole and throw in a little good leaf-mould and

ceaseless preparations in the darkness for the advent of light for the floral glories of a new year.

W. N.

FLOWER GARDEN.

WINTER WORK FOR FLORISTS.

THE weather hitherto has been very pleasant for all outdoor operations. Flower beds and borders are in capital condition, and the plants so well established that they may pass unscathed, even through a severe winter. It is the changeableness of our winters that is most to be apprehended in the case of choice florists' flowers. A continued dry frost, even if intense, would not do much harm, but if that is followed by a thaw and cold rains, to be again succeeded by frost, the result is that

When the weather is dry they should be carefully pressed into the ground with the fingers. We grow very few Carnations out of doors except seedlings to flower for the first time; these are the produce of seeds sown early in April, and are permanently planted out where they are to flower early in July. They are now large strong plants firmly rooted into the ground, and will scarcely require any looking after, as neither frosts nor rains will move them. Pansies should also be firmly established before winter. Besides their liability to be injured by slugs, &c., and to be thrown out of the ground, their stems are very brittle and snap off close to the ground during high winds; it is therefore a good plan to peg them down; but if inconvenient to do this, each plant may be supported by a neat stick. In ordinary mild winters Pentstemons stand well in the open ground; but to trust to out-of-door plants entirely will not do, as many of them get killed. It is best to treat them like ordinary bedding Calceolarias, viz., put in cuttings under handlights or in cold frames about the middle of October. They do not take long to form roots and establish themselves for the winter.

PHLOXES are perfectly hardy, and may safely be trusted out-of-doors. I was once shown a garden containing many good things in the way of hardy florists' flowers, Phloxes amongst the rest, and was informed that they had been in the same place for nearly twenty years. This is not the way to grow Phloxes well. They should not remain in the same place more than three or four years; new beds should be formed and planted with vigorous young plants raised from cuttings. Halving and quartering the old plants with a spade and planting out the separate portions is a rough-and-ready way of treating them not to be recommended. Tulips ought to have been planted a month ago, while the weather was exceptionally favourable for that kind of work, but we have not yet been able to plant ours. During winter some protect with mats thrown over bent hoops, but we leave ours quite open, and never lose any either through frosts or damp. Our Dahlias were out much longer than usual this year, but they have now been taken up, the tubers well dried, and then stored away for the winter in Cocoa-nut fibre refuse. Sometimes there is no alternative but to plant them out on the same ground from which they were lifted, but in that case it ought to be prepared without delay. When in a dry state it ought to be trenched and possibly manured, but it may easily be overdone in this respect, as a great proportion of the large-flowering varieties and fancies have a tendency to become coarse when overgrown, and the pompones are best when of small size. Trench the ground 2 feet deep, and use stable manure for heavy soils, and cow's manure for light ones.

THE HOLLYHOCK will put up with richer ground than the Dahlia. Being a gross feeder, we usually trench the ground for it 2 feet deep, and put in it two good layers of manure; the plants under such circumstances will often grow 10 feet high. This year the plants have all been left out-of-doors, in the hope that the Hollyhock disease, so difficult to eradicate, may be stopped. Notwithstanding that this autumn has been so dry and warm, no trace of disease appeared on the plants. It is, however, doubtful if even leaving out the plants all winter, at the risk of some of the delicate varieties being killed by frost, will quite kill this fungus. Our wild Mallows are exposed to all weathers, and yet they are desiccated by the Hollyhock disease. The mysterious way in which this parasite appears on the Hollyhock would almost lead one to believe in spontaneous generation. Those whose plants are infected in a mild way should pick off all the leaves on which there is any trace of fungus, and dip the plants in a mixture of flowers of sulphur and soft soap.

Beds should be in readiness to plant out Ranunculuses in February. Choice varieties, unless the ground is well aerated where they are planted, do not succeed. They should be planted from the middle to the end of February, and from the middle to the end of July is the proper time to



Flower of *Disa grandiflora superba* (natural size). See p. 492.

decayed manure, but avoid injuring surrounding plants, or uprooting any delicate little seedlings which may be showing above ground. The planting of bulbs requires great care. We generally plant five or six Daffodils or Narcissi near together, just throwing in two or three spadefuls of rich soil; the same applies to Crocuses and Snowdrops. Patches of Anemones should now be removed from the seed beds with a ball of earth, and carefully placed where they are to flower. If the soil is heavy, it will be necessary to add river sand or powdered granite. Pinks and Carnations may be divided, and cuttings which have well rooted may be transferred to prepared beds (a plan to be adopted with rare kinds) or planted in the borders. Thus even in November one's garden thoughts are full of hope. We do not linger among the graves and idly bewail the decay of the natural world, for we know that, in spite of the desolation around us, mysterious processes are going on in the ground beneath our feet—

many plants are killed. We had frost last week followed by sleet and snow, which left the plants in an uncomfortable state. Alpine Auriculas which were green and healthy before the frost have now many dead and decaying leaves upon them. When the ground is comparatively dry we remove such leaves, at least those that are quite decayed, and the plants are gently pressed into the ground with the fingers. Caterpillars and slugs also damage them. The leather-coated grub is often found feeding on them at night; one of these grubs will eat the heart out of a plant in one night. Pinks, Carnations, and Picotees are also in danger from the same enemies. Slugs are deterred by strewing the ground with soot, but the tough grubs do not heed it. If Pinks are planted out in September, or not later than the first week in October, they get firm hold of the ground, and an ordinary frost does not move them. Plants of them recently put out are thrown out of the ground with a slight frost.

dig their roots up; as soon as the leaves turn yellow they must be taken up, otherwise the roots are apt to start again. The late Mr. Thomas Hogg, of Paddington, in his treatise on florists' flowers is quite enthusiastic respecting the rich variety of colour that exists in the Ranunculus. He says: "Here yellow globular blossoms present themselves in all shades, from pale straw to golden crocus; reds of all tints, pink, rose, and flame colour; purple and crimson of every dye, and black, brown, olive and violet of every hue. Besides these there are yellow-spotted flowers, brown-spotted, and white-spotted, red and purple-streaked, red and white-striped, red and yellow-striped, besides mottled and brindled in countless varieties." Ground is generally wet in February at planting time, and in order to give the roots a good chance, I put 3 inches of fine mixed soil on the surface, and in this the small tubers are planted, with their crowns 2 inches below the surface, a pinch of sand being placed over each crown.

ROSES are now well at rest. Ours are nearly all dwarfs on their own roots or budded on the seedling Brier or Manetti stock. If it is intended to plant any out in the open ground in beds or borders, see to it without delay. In wet and heavy soils raise the beds above the ground level; a foot is better than 6 inches. We plant them 2 feet apart and finish off by placing a good mulching of decayed stable manure over the surface; this is put close to the stems. One season all the Teas were killed down to the manure by a severe frost, but the protected part was safe, and the buds started away from it freely in spring. They require no further attention until the time comes to prune them.

JAS. DOUGLAS.

DAFFODIL NOTES.

I FOR one especially thank Mr. Brockbank for his interesting comments from time to time made in THE GARDEN, but I am by no means sure of his deserving the title or credit of having been the first to point out or suggest that the labours of Leeds and Backhouse were due to the writings of Dean Herbert. The first suggestion in print I can just now find is by "Wyld Savage," who writes in the *Journal of Horticulture* for May 22, 1879, p. 383, as follows: "I may now perhaps appropriately supplement the above notes (referring to N. poeticus and N. Tazetta vars.) by referring to some of the more promising of the newer hybrids and varieties in the different sections—the new Narcissi, which were raised by the late Mr. Leeds, of Longford Bridge, near Manchester, and the late Mr. Backhouse, of Weardale, Yorkshire. These Daffodils no doubt are the results of Dean Herbert's treatise on 'The Hybridisation of Narcissi,' published in the *Transactions of the Royal Horticultural Society*." From this Mr. Brockbank will see that unless he published the conjecture to which he alludes (p. 455) before May, 1879, the credit of having first made it belongs to "Wyld Savage"; unless indeed, as is scarcely likely, Mr. Brockbank is himself the "Wyld Savage" of the *Journal of Horticulture*. All this may seem to outsiders of but little moment, but to myself and others interested, the history of Narcissi is a serious matter, and so I am anxious to sift all the information brought forward. Original information is, however, not so easy to obtain as one might imagine.

After alluding to Mr. Leeds' seedling Crocus on p. 455, Mr. Brockbank goes on to say, "All the Narcissi from the seedling beds" (in Mr. Leeds' old garden) "were removed here" (i.e., to Brockhurst, or Mr. Brockbank's own garden). This information is true, but it is not the whole truth. Mr. Brockbank simply removed what few Narcissus bulbs remained after Mr. Barr and his friends had lifted the bulk of Mr. Leeds' seedlings, all of which, as I understand, had been by them purchased from Mr. Leeds. I hope, however, that Mr. Barr will himself publish a full account of his transactions with Mr. Leeds respecting these seedling Narcissi; but one thing is clear, viz., that Mr. Brockbank only obtained what few

Narcissi Mr. Barr had accidentally or otherwise left in Mr. Leeds' garden or rockery. I am anxious to make this point clear, because anyone unacquainted with the facts of the case by reading Mr. Brockbank's statement (p. 455)—"All the Narcissi from the seedling beds were also removed here"—might innocently be led to believe or infer that all Mr. Leeds' seedling varieties of Narcissus passed into Mr. Brockbank's hands, an inference which would be contrary to fact. In a word, "All the Narcissi from the seedling beds" (on p. 455) simply means all that Mr. Barr left in the ground—that is to say, the gleanings picked up after the main harvest. I am quite sure Mr. Brockbank did not intend what he wrote on p. 455 to be misleading, but standing alone, as it does, the statement might be wrongly interpreted by the reader—a result I am sure Mr. Brockbank would deplore as much as myself. There is another sentence in Mr. Brockbank's notes to which all I have before said will apply; it is this: "Mr. Leeds' garden is now a thing of the past. The site has been cleared of every plant and laid out for building land. I often rejoice that it was my good fortune to hear of it before the plants were dispersed. For two years I regularly visited the garden and marked down for removal every bulb and plant worth having, and these were all transferred to my garden here." This, again, is a true statement, but not the whole truth, the fact being that all the new seedling Daffodils and Narcissi were purchased from Mr. Leeds and removed by Mr. Barr, after which removal no doubt Mr. Brockbank did as he has stated. Mr. Brockbank himself has told us some of the facts of the case, no doubt, and may yet tell us more, but I shall look to Mr. Barr for a true and unvarnished tale of the whole transaction relating to these Leeds Daffodils. It only remains for me to say that all italics here are mine. Anent the seedling of

DOUBLE DAFFODILS I have a few words to say, and a quotation to make which has a bearing on the subject. That a perfectly double Daffodil can never under any circumstances bear seed is a foregone conclusion, since both style as well as stamens are rendered abortive by being transmuted into petaloid organs. In many semi-double flowers, however, the style is perfect, although there are no stamens developed. Such a flower may bear seed, being cross-fertilised by pollen from normal or single flowers growing in its vicinity. Or, again, some semi-double Daffodils have an odd pollen-bearing anther or two unaltered in the doubling process, and pollen from these might be effectual in fertilising the styles of the semi-double blossoms before alluded to, but I shall quote the following paragraph in full from p. 40 of "The Epitome of Gardening." It is written by Dr. M. T. Masters, who has made vegetable teretology an especial study, and it originally appeared under the head of "Horticulture" in the "Encyclopædia Britannica." The paragraph is that devoted to double flowers as follows: "The taste of the day demands that double flowers should be largely grown. Though in some instances, as in Hyacinths, they are decidedly less beautiful than single ones, they present the advantages of being less evanescent. Under the vague term 'double' many very different morphological changes are included. The flower of a double Dahlia, e.g., offers a totally different condition of structure from that of a Rose or a Hyacinth. The double Poinsettia, again, owes its so-called double condition merely to the increased number of its scarlet involucre leaves, which are not parts of the flower at all. It is reasonable, therefore, to infer that the causes leading to the production of double flowers are varied. A good deal of difference of opinion exists as to whether they are the result of arrested growth or of exuberant development, and accordingly whether restricted food or abundant supplies of nourishment are the more necessary for their production. It must suffice here to say that double flowers are most commonly the substitution of brightly coloured petals for stamens or pistils, or both, and that a perfectly double flower, where all the stamens and pistils are thus metamorphosed,

is necessarily barren. Such a plant must needs be propagated by cuttings (or division). It rarely happens, however, that the change is quite complete throughout the flower, and so a few seeds may be formed, some of which may be expected to reproduce the double-blossomed plants. By continuous selection of seed from the best varieties, and 'roguing' or eliminating plants of the ordinary type, a strain or race of double flowers is gradually produced."

This is the rationale of the subject from good authority, so that it is quite evident that Mr. Brockbank and Mr. Cornhill have both obtained seeds from flowers of N. Telamonius fl.-pl., which were semi or partially double only, as no flower perfectly double can possibly produce them. I trust both Mr. Brockbank and Mr. Cornhill may be rewarded by rearing distinct seedling double forms as some compensation for their perseverance.

F. W. BURBIDGE.

REPOTTING AURICULAS.

OBSERVANT readers will note that almost every grower of Auriculas has his own pet notion as to points of treatment. "R. D.'s" experience, as shown in his remarks (p. 454) on "Auriculas late in autumn," are worth knowing, and his ideas are worth considering. His practice is not, however, in accordance with that of some other growers of repute. That, however, only shows how the culture of the Auricula varies. Take, for example, the time of potting. On this point there is great diversity of opinion. Some growers of high standing maintain that the proper time is early in June. I have always been strongly of opinion that the result of potting so early will be, and generally is, a profusion of autumn bloom. It stands to reason that it should be so, as Auriculas, in common with Primroses and other kindred flowers, have a propensity to bloom twice in a season, and the incitement to growth and inducement to bloom are afforded them when they would be better at rest. My own experience is that the best time to repot is from the end of July to the end of August. By the end of July the seed has been fully ripened, a week or two of rest has supervened, and consequently the plant is in the best condition to be dealt with for next season's work. There are some varieties which insist on blooming in autumn whatever time they are potted. Maclean's Unique is a notable example of this. Sometimes you get an autumn bloom of first-rate quality, though this does not happen as a rule. This year I have had a truss of Mrs. Douglas much finer and brighter than I have ever had it in spring. I seldom have autumn bloom, which I attribute to my potting during August. With "R. D.," I do not think that early or late potting has any effect whatever on early bloom in spring. As to top-dressing in spring, which "R. D." seems to practise, I consider it a waste of time, and question very much whether it does any good to the plant or makes the bloom any better. To test this, I top-dressed one of my frames two years ago, but I failed to see any difference in those top-dressed and those let alone. In this matter I was glad to see recently that Mr. Douglas, who all will acknowledge grows Auriculas successfully, held the same opinion as I do. If top-dressing were so great an advantage as some suppose it to be, he would not take so high a place in competition with those who practise it. Like "R. D.'s" plants, mine have looked remarkably well all this season, but I never adopt his practice of syringing overhead with water. By careful watching this year for a few weeks I prevented the little green caterpillar from doing any injury. Two years ago one of them ate out the heart of Prince of Greens, but the result was that I had two good plants next year. Their help in propagating, however, is not always desirable, and when seen they should be shown no mercy. The plants should now be thoroughly at rest, and attention to cleanliness and seeing that they do not get too dry is all that is needed till growth starts again in February. I wish "R. D." had described the flower of Hetty

Dean as well as the foliage; if it is a marked improvement on any yellow we have, it will be worth looking after, and it is desirable to know all about it.

J. M.

BUR MARIGOLDS.

(BIDENS.)

THE Bidens, or Bur Marigolds, as they are commonly called, are chiefly natives of North America; as a whole they are not by any means valuable garden plants, such, for instance, as *B. minima*, *B. cernua*, and others being mere weeds, rarely if ever seen outside a botanic garden; but a few are really useful annuals, which, from possessing a shade of colour and a large share of finely-cut foliage different from that of plants commonly grown, help in a measure to give variety to our mixed borders. They are best treated as half-



Bidens humilis; flowers yellow (natural size).

hardy annuals, and as such need well thinning out, for if this is neglected the chances are that they will be leggy and the flowers small and worthless. *B. humilis*, represented in the accompanying illustration, was introduced from China quite recently, and promises, owing to its graceful habit and profusion of sweet flowers, to become a general favourite. It grows about a foot in height, and forms a loose, procumbent bush, the leaves of which are bipinnate, some being finely cut and quite narrow, while others are larger and nearly oval in shape. The flowers, which are golden yellow, as large as a florin, and either flat or beautifully recurved, are produced singly and in great profusion. It is said to be perennial, but its hardiness is doubted, and we find it to answer well as an annual, sowing it where it is intended to remain and flower during the summer months, and, indeed, until cut off by early frosts. *B. striata*, a beautiful white-flowered annual with a pretty golden centre, is also very useful in mixed borders. It grows from 1 foot to 2 feet in height, is branched, and has finely-cut pinnate leaves. It is a native of Mexico. *B. Becki*, a semi-aquatic species, found

plentifully in the vicinity of New York near ponds and also running streams, has opposite leaves deeply cut; the flowers, which are golden yellow, are about 3 inches in diameter. This is a really desirable plant for the margins of ornamental water, where it will even stand being submerged. It flowers in August and September. *B. chrysanthemoides*, a charming annual species which grows about a foot in height, has pretty serrated leaves, and bears a profusion of flowers 2 inches to 3 inches in diameter, the ray florets of which are golden yellow and the disc purple. It is a native of Canada and the United States. *B. procera*, a handsome annual, with very narrow, much-pinnate leaves and large yellow golden shaded flowers, is a native of Mexico. It flowers in October and November. Others worth attention are *B. odorata*, a sweet-scented white-flowered very pretty species, *B. succisa*, *B. lineariloba*, *tripartita*, and *ferulæfolia*.

K.

AURICULAS AND AUTUMN BLOOM.

AUTUMN blooming is a natural habit, which we do not expect to overcome in the Auricula. Other members of the family possess it, and a mild autumn seems to encourage them all the more to exhibit it. To a spring-flowering plant that has also an autumnal season of activity above ground, the conditions of the daylight and temperature in April and October may appear sufficiently similar and suitable to admit of its getting up more or less of a flower show at the latter period; but the display at the half-ebb of autumn tide is, we know, comparatively poor and cramped. All the signals of waning light and falling leaves are against it, and though a plant may run past these red lights of caution, yet it soon draws up and stops. Some Auriculas are more given to autumn blooming than others, and if these are grown or used as seed parents, the habit is sure to be kept up and transmitted in some degree. Taking years together, it occurs pretty equally among all the classes, although in any one season the edges or the selfs may come forward as the chief transgressors. So far as culture can guide them in the desired way, I have found it best to let Auriculas feel no check in their summer growth, and no avoidable excitement during their autumnal activity—that is, they are kept in both summer and autumn cool and moist. The plan of syringing them during their growth, which Mr. Dean speaks of, is good, provided the plants can be naturally dried by abundant circulation of air. This process of course takes off the mealy beauty of the white-foliaged ones, but that feature is of less account, is of less intensity, and less in season during the summer months; and its absence, where the plants are wetted, is, in fact, a safeguard against water being held, as it is sure to be, in densely mealed foliage.

AS TO REPOTTING, it is practically no check at all to a healthy Auricula. Times are generally chosen when the root-fibres are stirring and soon have fresh hold in a congenial soil, and the plant feels the change as little as the express train does in taking the points for change of line at the junction. I have always repotted Auriculas as they pass out of bloom. Weight and speed of growth, at that high season, are a very momentum of life that carry the plant past the apparent mechanical check; but in general practice I may say one is always repotting Auriculas where there are full plants and offsets and seedlings of all shapes and sizes continually in hand. The sick list is small and the death rate low, but the selecting rate is severe, and the "pitching-out" rate something awful. The effect is brilliant beyond the conception of those outside the florist circle, to whom the expression of an outsider's free-and-easy and irresponsible judgment is a delight. At whatever time a plant with me is ailing it gets pulled up and repotted. If it looks too tight in the pot—though to Auricula roots pretty tight-lacing is no evil—it is shaken out, and, with some of the oldest roots and stem cut off, is put back into the same pot. As a rule, I do not use any pot smaller than 3 inches or larger than 4½ inches across. The plants that are too small for a 3-inch

pot are grown in pans or boxes till large enough to pot off, and those that seem too large for a 4½-inch pot are made to go in. The staple trade of our village is a clay and stoneware pottery, and the manager very kindly has the clay of a 4½-inch pot used up in making me a 4-inch pot with the balance given towards an extra depth, which I prefer to width for these plants. My friend, Mr. Dean, I think, will not find that the "second shift" he asks about (p. 454) has an appreciable effect either way upon autumn blooming. If a plant has a bold filbert heart in August or September, it is very likely to send up a flower-stem, irrespective of any hint to keep quiet. Still, it is always worth while to try one's best to keep a fine autumnal heart at rest, or a truss that is showing from getting out upon its legs. This, I think, is best attempted by plunging such plants in some cool and equally moist bottom in an outdoor north aspect. If, however, the plant shows determination to flower by sending up its stem and colouring its buds, then help it to get done with it as soon as possible by placing it in a warm, bright situation, where the buds may come on merrily, to be rubbed off as the stem clears the foliage. So may the new heart be the better fashioned before it is time for the foliage to die off, and the plant assume the sleeping beauty of its frost-proof winter habit. In the case of some valuable seedling or scarce variety that happens to send up an autumn stem with a guard leaf or two upon it, the stalk will not attempt to wither while a leaf is green; and it is worth while to leave it for the chance, which is fairly good, of a young plant being formed among the axils of the leaves or stalks of the buds that were rubbed off. With due care this becomes practically an offset, and may be nursed into a young plant.

As to the yellow selfs, I have not found them as a class to be shy growers, and I am glad to hear that Hetty Dean is, well—a pretty thing, which I have not seen in flower since its first bloom with me as a seedling. There come many curious sports among seedlings, that have a green, grey, or white edge on a yellow body colour; and the experience of several growers to whom I have sent these is that they have a great tendency to die off or be delicate.

F. D. HORNER.

Burton-in-Lonsdale, Yorkshire.

Transplanting Black Bryony.—If "J. C. B." would successfully transplant this from its native site into his grounds, he should look out for a hedge that is being levelled, where the workmen would, for a small *douceur*, carefully go round the tubers and get them out uninjured. In this way I have succeeded with immense roots, but it is a year or two before they yield strong bine. It grows most vigorously in rather heavy soil. As it is diocious, he must obtain both sexes if he would fruit it. By the way, it is this year, like nearly all our indigenous berry-bearing plants, very much more fruitful and finer than usual. I have often thought how much it would be prized if it were an exotic. I have before now gathered specimens of it 16 feet to 18 feet long, berried from end to end, and used to twine them up the rafters of a greenhouse amongst the climbers. In a dry greenhouse the berries keep fresh and bright for months if collected when the fruit begins to colour.—J. M., Charmouth, Dorset.

Chrysanthemum synonyms.—Doubtless many admirers of Chrysanthemums have noticed a plurality of names for one variety, and have been as much misled and troubled with them as myself. As far as I can judge, the various catalogues sent out all contain similar faults. For instance, Mabel Ward is offered as Bendigo; Snowball, Mrs. Cunningham, White Queen of England, and Lady St. Clair are but other names for Empress of India; and a host of others. Would it not be much better for all growers to agree to one list of names, just as the Daffodil conference has done? Mr. Burbidge's book is excellent, but has one great fault, viz., the type is too small, even for the best of eyes. If necessary, a conference of the chief Chrysanthemum growers

might arrange a list of names and simplify matters.—PERE DELAUX.

* The fault here complained of as regards Mr. Burbidge's book will be amended in the next edition.—ED.

INDOOR GARDEN.

IMPROVED GLOXINIAS.

Few plants have been more improved of late years than Gloxinias; instead of the small flimsy blooms which we used to see, resembling those of the Foxglove, we now have them more like the Allamanda in form and size, and not only are they large, but they are of great substance, and exquisite in colour and marking. The improvement, too, great as it is, has not been confined to increasing the size and stoutness; it has fortunately taken another turn, and given us erect flowers—an immense gain, as instead of their beauty being hidden, it is now well displayed to view. At one time Gloxinias were only to be met with in summer, but now that more attention has been given to them and their cultivation, they may be had at almost any season, as by sowing at different periods and raising fresh plants, it is an easy matter to keep up a constant succession.

NAMED SORTS can only be kept true by being propagated from leaves or by division, which may be done as soon as the bulbs start; they may then be cut or split through, so as to secure a shoot with each piece, and then potted, at the same time using a little sand to dry up the wounds. When struck from leaves, it is necessary for them to be fully grown and firm, as when in a soft state they are apt to damp off or rot before they have time to heal and form a bulbule at the foot of the stalk. The way in which leaves should be managed is to take them off and insert them in sandy peat round the edge of a pot, which should then be plunged in another a little larger and filled round with Moss, or set in a pan and covered with a bell-glass till they root. To induce them to do this they must have brisk heat, a shady shelf near the light in a stove being a good situation for them, as also after they are struck and got to rest, when they should be left intact in the soil till the beginning of the year or later; after that they may be shaken out and potted, as wanted, for starting, but they must be sparingly watered till they get plenty of foliage to take it up and convert it to use. As to soil, nothing answers better than fibry loam and leaf-soil with a little rotten cow manure and sand, in which mixture they should be potted somewhat firmly in 6-inch pots, a size sufficiently large, with good feeding, to accommodate neat specimens, as they do not require much room. To get the plants to be of real service and fit to stand in a greenhouse or room, they must not be grown in much heat, from 60° to 70° being quite enough, in which temperature they will make stout, sturdy foliage and flowers that do not flag through a change from the stove.

GLOXINIAS FROM SEED succeed well. The first sowing may be made as early as January, but the seedlings got up at that time of year require careful watching to prevent them from damping. Before putting the seed in, it is necessary to be particular in the preparation of the pots or pans, which should be well drained and filled with very fine light soil made level and smooth on the top, and when this is done it ought to be watered and left for a few hours to settle. The seed should then be scattered thinly and regularly over, but not covered, except by having a pane of glass over it to prevent evaporation; and by thus keeping the air close and moist the seed will soon germinate, after which the pan containing the young plants should be stood on a light shelf in the stove close to the glass, and have only just water enough given by sprinkling to keep the soil moist. As soon as they get large enough to handle it will be necessary to prick them off, which may be done in shallow pans, and if damped by syringing, after that their growth will be rapid, but before they get crowded they should be potted singly in 3-inch pots, and as soon as they have filled these with roots, shifted into 6-inch ones, which, as observed

above, are large enough for them to stand in and bloom. During summer almost any ordinary pit or frame answers for growing Gloxinias, as they may be stood on temporary shelves or on a floor of coal ashes, and after being syringed, shut up early, so as to secure sufficient heat from the sun. What injures the plants more than anything is a dry atmosphere, which brings on red spider and thrips, insects which soon spoil the foliage by turning it brown. Old plants may soon be started, but the best way is to bring on a few at a time and to depend on the seedlings to keep up a succession. S. D.

PROPAGATING LUCULIA GRATISSIMA.

THE flowering of this plant again reminds one of its beauty and usefulness for greenhouse or conservatory decoration at this time of the year. It is unfortunately rather difficult to flower in a young state, or even to get established as a large plant. Its noble terminal corymbs of rosy pink flowers are very fragrant, and on a healthy bush produced in profusion. They are, however, of no use in a cut state, as they droop almost immediately and do not revive when placed in water. It is generally recommended to propagate this plant by means of cuttings, and I am aware this is possible, but I must confess to being unable to obtain a single plant by this method. Some placed in a propagating house in spring damped off in two days; others inserted singly in small pots and covered with a bell-glass in a cool house retained their leaves for three or four months quite fresh, but eventually died without emitting roots. Some more, treated at first in a cool house and then transferred to a warmer temperature, also failed. A quantity of seeds were introduced from India and distributed some time ago. These apparently germinated very freely, at least those which we received did so, but many of the plants obtained subsequently died after being potted off in consequence of the roots being injured, Luculias being very impatient of root-disturbance at any time. Several others are at present from 1 foot to 2 feet high, but very few are flowering this year. Speaking from memory, the seeds were sown about eighteen months ago. I am told that Luculias are increased for the trade by layering. I have not tried this method, but should be much interested to know—as would doubtless many other readers of THE GARDEN—the best time for performing the operation and the plan to be adopted. As soon as a plant reaches a good size I should advise planting it out in a light position in a greenhouse, or other structure not too cold. If placed in the same bed as other permanent plants, a portion of loamy soil, about a yard square, should be enclosed either by a brick wall or large slates made to fit close at the corners. This is necessary in order to keep the soil nearly or quite dry when the plant is at rest. The shoots, after flowering is over, may all be removed back to about three eyes at the base, which will be sufficient for the following year. From the time when this pruning is performed until growth commences again, about April, water should be entirely withheld, as sufficient moisture will invariably be retained by the ball of soil. Plenty of water may be applied in summer. The site selected for planting out should be a permanent one, as transplanting may be attended with fatal results. It is important that light should not be excluded by creepers or by other means, as the growth made in a shaded position is rarely sufficiently solidified to produce flowers. J. G. K.

Potting Lilies.—Surely "Byfleet" (p. 433) is not in earnest in maintaining that Lilies would do just as well if allowed to remain in the same pots two or more years in succession. When properly potted the great mass of roots above and below the bulb feed on every ounce of material in the pot; so much so, that to perfect the blooms in the end of the season, I and most other growers have to keep them on with liquid manure. If this is so, it seems unreasonable to suppose that the Lily of the succeeding year can live and thrive on the material which its predecessor has already ex-

hausted, except it can be shown that the decomposing roots and scales afford food for it. This would raise the whole question of the necessity of the customary annual potting, planting, renovation of soil, and manuring which most people consider desirable. I agree with your correspondent that food for the stem roots might as well be put in at first as subsequently, but I have recently written on this subject in THE GARDEN.—W. J. MURPHY, *Clonmel*.

Encholirion corallinum.—M. Truffaut, of Versailles, possesses a variety of this which is said to far surpass the type in beauty. It came amongst a number of seedlings several years ago, and was exhibited at a meeting of the French National Horticultural Society, where it obtained a first-class certificate. The leaves are striped with red on a dark green ground. Its habit is good, and the flowers are brilliant and last a long time in perfection. Thus it combines beauty of form with handsome foliage and brilliant flowers. M. Truffaut predicts that this Bromeliad will rank high in the estimation of plant lovers.—BYFLEET.

Sansevieria zeylanica.—The upright aspect and long, prettily marked, spear-like, fleshy leaves of this singular looking plant invest it with considerable interest. Its cultural requirements appear to be few. We have a large potful of it growing in a warm house, which has had no other attention than plenty of water in summer for several years. Some of the leaves are from 4 feet to 5 feet long, and the pot is crammed with creeping fleshy roots; this root-bound condition has doubtless induced it to flower, which it did freely this season. The flowers are comparatively inconspicuous, borne on long spikes, and are of a whitish green colour; they are also strongly—almost disagreeably—fragrant. Its fruits or berries are bright red, resembling those of Asparagus, but contain only one seed each. This plant is largely cultivated in the East Indies for the tenacious fibre which it affords.—A. MOORE, *Cranmore*.

Brugmansias planted out.—These showy plants are very effective in conservatories when planted out, and they submit to heading down with impunity. I lately saw some very fine specimens of them at Eastbury Manor covered with blossoms for the third time this season, and the large size of both leaves and blossoms showed that planting out such subjects had great advantages over pots or tubs. In the latter it is well-nigh impossible to supply their wants in regard to moisture and root room. Give them plenty of space and they will flourish in almost any kind of soil; the plan adopted here is to head them down as soon as they cease flowering in autumn to about 5 feet high, after the fashion of a pollarded tree, thus admitting light and air to the other occupants of the conservatory, such as Camellias and other winter-flowering plants. Anyone having large conservatories to fill will find these Brugmansias most useful subjects for the purpose.—J. G. H.

Diseased Gardenias.—I lately saw what appeared to be a healthy plantation of Gardenias in a pit-like border of a small house. They were planted out, and upon examination I found that they were all in various stages of disease, the point of attack being about the collar and about an inch upwards. I made inquiries as to their treatment with a view to discover the cause. I was told that they had been treated in the ordinary way as regards light, nearness to the glass, air in the summer, and that they had never been dry. A plant taken up for my inspection showed the roots to be in a healthy condition, no appearance being visible to account for the disease. On enquiring what they had been dressed with, I was told that a weak solution of paraffin had been used. My impression was that that accounted for the failure. I found, too, that quicklime had been applied to the stems, which would probably aggravate the evil. The bark about the collar was in a wet, decaying state and emitted an offensive odour; apparently the flow of sap was arrested at that point. The gardener, however, assured me that the same dressing had been used before without

causing any injury, and stated that he believed the disease to be due to a fungoid growth. Can any of your correspondents throw any light on this matter?—C. D.

5280.—**Seeds of *Lecythis Ollaria*** (Sapucaya Nut) are sometimes exposed for sale in Covent Garden Market. We obtained a stock of young plants by means of seeds purchased from there about two years ago. The whole fruit may sometimes be seen in shops, but more frequently the seeds only are imported. Nuts of Sapucaya, of Brazil Nuts, and of the Cannon-ball tree (*Conrou-pita guianensis*) are imported fresh about April. I have not seen seeds of the latter offered for sale in Covent Garden, but no doubt they could be procured through merchants who import the Brazil and Sapucaya Nuts. It may be worth while adding here that good seeds of Litchi (*Nephelium Litchi*) may be bought in Covent Garden Market. Seeds of *Lodoicea Seychellarum*—the double Cocoa-nut—can only be obtained, so far as I know, by importing them direct from the Seychelle Islands, where this Palm is endemic. Seeds of it reach Kew now and then, some of which have germinated, but have never got beyond that stage. I need hardly add that living plants of this interesting Palm are not known to exist in Europe—the only one of the Palms of the Seychelle Islands which has not become established and popular in European gardens.—W., *Kew*.

Cereus flagelliformis, commonly called the Cat's-tail Cactus, is worthy of more care than is generally bestowed upon it. Well grown, it is one of the most attractive and distinct plants in cultivation. We have a specimen of it upwards of ten years old, which every spring is a perfect picture, bearing upwards of a hundred of its extremely graceful, bright rose-coloured blooms. This plant has been seven years or more in the same pot and grows as finely now as at any period of its existence. It gets no water in the winter, but has a little liquid manure in summer. Comparing this treatment with that required for so many flowering plants, one wonders that a plant having so much to recommend it as this Cactus has should be so neglected. It is more beautiful than many Orchids, but it belongs unfortunately to a race of plants which are unpopular, and which consequently receive but little attention. Even when out of bloom this *Cereus* is ornamental, forming quite a dense curtain of slender growths clothed with thickly-set, glittering spines; it is one of the best of plants for a hanging basket in a cool house or window. All that it demands in summer is plenty of sun and air; then it makes strong growths and blooms freely. A good-sized plant of it lasts a considerable time in flower, as while the first blooms are expanding the last ones are only just making their appearance.—J. C. B.

Abortive *Amaryllis* blooms.—The withered flower-stems and abortive flowers on the *Amaryllis* referred to by "H. K." (p. 452) are assuredly the result of imperfect, ill-ripened growth or a too short period of rest. Having been grown so far away from the glass, they would not receive the amount of direct rays from the sun that they require to consolidate their growth perfectly, and this would have the effect of preventing the foliage from drying off at the usual time, nor would they be inclined to rest so naturally as they would had the growths been well ripened by full exposure to air and light. The fact of the roots being healthy and active strongly corroborates this conclusion, and plainly points to atmospheric conditions as the cause of the evil. No plant grown under artificial treatment requires more exposure to sunlight than the *Amaryllis*; it should therefore be placed close to the glass and during summer receive as much fresh air as is consistent with a proper temperature, such as that described by "H. K." I would recommend that those which are now making growth be induced to continue the same as slowly as possible until more light can be secured. They should be placed in the lightest position in the house and as close to the glass as possible. They should receive only just sufficient water at the root to keep them

moderately moist at this dull season, with an occasional syringing overhead on fine mornings to clean the foliage and prevent too great exhaustion after fire-heat has been used. Those that are still at rest should remain in a cold house and be kept quite dry at the root till they show signs of growth, giving them at all times as much light as possible. They bloom the more freely for being root-bound, and when in that condition are greatly benefited by weak applications of liquid manure when growing freely, and especially when the flower-stems appear.—W. C. T.

—The time for *Amaryllises* to flower is March and April, but in large collections isolated specimens may be found in flower at unreasonable dates. If it is intended to have them in flower from August onwards, it would be best to grow the recently introduced hybrids of *A. reticulata* of the Autumn Beauty and President Garfield type. Abortive flowers are caused, as a rule, by defective root action. In other cases flowers may become abortive through being too far from the glass; they ought to be within 2 feet or 3 feet of the glass, and should be aided by a little bottom heat. The right treatment for plants of them at this season and up to the middle of January is maintaining perfect rest by keeping them cool and quite dry at the roots. It is not a good plan to keep them in the same pots for two or three years. They should be potted annually about the middle of January, and the pots should at once be plunged in a gentle bottom heat, but the temperature of the house should not be more than from 45° to 55° with a moist atmosphere. Under these circumstances the bulbs will start simultaneously into flower and growth. If bottom heat cannot be afforded them, they will start in any house having the same temperature. I have grown them well by placing the pots on a shelf in a vinery. The Vines were started with a temperature of 45° about the middle of January, and the temperature, being gradually increased, just suited the *Amaryllises*. At one time we used to make a heap of fermenting manure in the early vinery, and that suited the *Amaryllises* exactly. In all cases in which plants or fruit trees are forced, the action of the roots and that of other parts of the plants or trees should move together, but it is better that root action precede top growth than that these conditions be reversed. As a general rule, it is when the latter conditions prevail that one finds abortive flowers and fruits prevalent.—J. DOUGLAS.

Gloxinias in winter.—There appears to be a growing disposition to utilise *Gloxinias* as winter flowering plants, and it is probable that, like winter blooming *Pelargoniums*, they will increase in popularity as their capabilities for this purpose become better known. The best results are apparently obtained from seedlings, the seed being sown in spring, so that the plants are well formed by autumn, but only just coming into flower. *Gloxinia* seed germinates with much freedom if sown on light sandy soil, but thinly covered and kept in a temperature of about 60°. When large enough to handle, the young plants should be pricked off into 6-inch pots or pans in peat or leaf-soil with plenty of sand in it. If kept in a light position in a warm, growing temperature and shaded from hot sun, they will soon develop into thrifty little plants large enough for 2-inch pots, and should be placed in 4½-inch pots by the middle of July. *Gloxinias* like plenty of light when growing, or the foliage becomes too much drawn and the plants have not that nice sturdy appearance which is natural to them. In fine weather, too, they should get plenty of air, both night and day. Careful attention in the matter of watering is an important item in *Gloxinia* culture, as although the soil must never get dust-dry, if it once becomes close through overwatering the roots never again seem to be able to work with freedom in it.—J. C. B.

Tydasas in flower.—Though repeated attention has been directed to these useful autumn and winter-blooming plants, strange to say, they are but seldom met with in gardens. Nevertheless, just now in a warm house their pretty quaintly-marked flowers are the admiration of everyone

who sees them. The plants under notice were rested for a little time after flowering last season, and when repotted were started in gentle heat, but as they progressed they were removed to a cold frame, where they remained during the latter part of the summer. The effect of this was good sturdy growth instead of the spindly shoots which would have resulted from growing them throughout the season in a close atmosphere, and as soon as they were removed to warmer quarters their flowers opened quickly. These plants seem to delight in a light, free soil, and are greatly benefited by doses of weak manure water being given them during the later stages of growth. Great numbers of *Tydasas* may be found in nurserymen's catalogues, but a few of the best are *Cratère*, *Pluton*, *Robert le Diable*, *Mdme. Heine*, *Lady Caroline Kerrison*, *Mdme. Halphen*, and *gigantea*. It is, however, by no means necessary to start with established plants, as a pinch of seed will generally yield great numbers of widely different forms, and if sown early in spring good flowering plants by autumn will be the result. The seeds are very minute, and should be sown on the surface of the soil, the only covering needed being a pane of glass put over the top, as is done in the case of *Gloxinia* seeds.—ALPHA.

***Dracæna Cantleyi*.**—A plant of this distinct *Dracæna*, growing in the T range at Kew, gives every promise of proving a worthy companion to the now popular *D. Goldieana* and *D. Lindenii*. In habit it resembles the robust-growing species of which *D. fragrans* is the most familiar and to which *D. Lindenii* belongs, whilst in the mottling of its foliage it approaches *D. Goldieana*. This new addition to true *Dracænas* has found its way into English gardens from Singapore, where Mr. Cantley, after whom it has been named, is superintendent of the Botanical Gardens. The plant at Kew is about 18 inches high; the stem is covered closely with long curving leaves quite 2 feet in length and 5 inches in width. The ground colour of these leaves is a deep shining green, upon which are numerous large blotches of a much paler green tint, and each blotch is surrounded by a broadish margin of yellowish green. The variegation is of a somewhat singular character, and has the appearance of foliage thickly spotted with some pale green liquid which has partly dried and become paler on the outside. At present it is impossible to say how valuable this distinct *Dracæna* may prove for commercial purposes, as we do not know whether its multiplication will be easy or difficult of accomplishment. As an ornamental plant of rather novel appearance it is deserving of becoming better known, and we hope sooner or later that it may find its way into other collections besides that at Kew, where, so far as we know, it is unique. A plant in the Kew collection is certain to become available for all as soon as its propagation admits of its distribution.—B.

***Spiræa palmata* for forcing.**—This and *Spiræa japonica* are, perhaps, two of the most useful plants for early forcing, but whilst the latter is very easily brought into flower at almost any time after Christmas, *S. palmata* not unfrequently proves a failure. For *S. japonica* the only treatment required to bring about its successful forcing is the cramming into pots and storing away under stages and covering with ashes or fibre, the crowns obtained either from dealers or from the open ground. On placing these in a warm house and watering them freely, leaves and flowers are soon produced in abundance; but if *S. palmata* be subjected to similar treatment, it is almost certain to prove unsatisfactory. A sudden change from a low to a high temperature is most injurious to this plant, but by gradually raising the temperature a degree or two each week, the roots are coaxed into premature growth, and the crowns burst and develop their leaves and handsome heads of deep rose-coloured flowers as freely as does the commoner *S. japonica*. We put up our crowns of *S. palmata* at the present time, and bury them in ashes in a cool frame. There they remain till early spring, when they are removed into a greenhouse, and subjected to greenhouse

temperature for a week or so. By removing them into a warmer house, or raising the temperature of the greenhouse, growth is accelerated without being unduly hastened, till finally the temperature of a stove proves uninjurious to the leaves and flowers. It is only when the change of temperature is extreme that *S. palmata* proves unsatisfactory as a plant for early forcing; when treated as above recommended it never fails with us.—W.

Salvia Pitcheri.—Some fail to flower this Sage successfully from cuttings struck the previous spring through keeping the plants in small pots. All *Salvias* are gross feeders and require plenty of root room. My own way of growing them, and one which I have succeeded with, is to strike the cuttings in heat in spring, harden them off, and plant them out on a south border in May, pinch occasionally, and water with liquid manure when the flower buds are formed. I thrust a spade round the roots, and in a week afterwards I pot them. In this way I have grown *Salvias* 5 feet through.—CHARLES E. MAGILL, *Dalguise, Monkstown, Dublin.*

Palms on rockwork.—The only place where I have seen these used in this way is at Bryn Glas, Newport, Monmouth, where in the beautiful conservatory there they have been introduced with excellent effect. The interior of the north wall of the conservatory—a long and high one—has been charmingly made into rockwork, over which *Ficus repens* grows in great profusion, but the most effective of all plants on it are the Palms, consisting of the *Seaforthia* and *Latania* types. These had been planted out when small in the recesses of the artificial rocks, and are now well furnished graceful plants from 3 feet to 5 feet in height. They have certainly a much more natural appearance grown in this way than in pots, while they impart to the whole arrangement a tropical-looking aspect.—CAMBRIAN.

PINCHING LAPAGERIA SHOOTS.

THOSE who have large clusters of *Lapageria* flowers should pinch the young growths in summer. I am quite sure this is the way to secure clusters to those who prefer them, but care must be taken to pinch at the right time. All strong shoots should be allowed to extend till they produce the broad leaf, which they never do until they have run out to a good length, and if the shoot is stopped at a narrow or base leaf it will only needlessly arrest growth. In strong shoots pinching may not be advisable till 6 feet or 7 feet is reached. The pinching hardens the wood and plumps up the buds, and the best clusters are always found just behind the pinched point. At a nursery near here, where long annual growths are encouraged in order to produce large plants quickly, I notice few or no clusters, but the ends of the shoots produce sometimes as many as twenty and thirty flowers in the space of 1 yard, and such wreaths are very beautiful and useful for decorative purposes. I am not sure that the one plan produces more flowers than the other, but the flowering habit induced is different in the two cases. I have generally pinched, and have in consequence numerous clusters of both the red and white kind, but this season, in a house lately devoted to the *Lapageria*, and which it was desired to fill with shoots that have been allowed to run up without stopping, we have no clusters worth speaking of, but plenty of flowers in ones and twos and threes along the shoots, one planting filling one side of the roof. The *Lapageria* will root freely in several composts—peat, pure loam, and half and half—but I think it flowers best in a mixture of the two, with plenty of charcoal, ground brick, and burnt soil, &c. In such a compost, if it is firm, the roots are numerous and permeate the soil in every direction. In pure, soft peat they are longer and thicker and the growth corresponds, but the flowers are not so plentiful. Has anyone tried lime rubbish in the compost? I hear of it being recommended. I have not tried it myself as yet, but in a bed drained with common coal ashes I once found the roots in great abundance in the drainage. In some cases the leaves of the *Lapageria* are very

apt to wither and die at their points, and sometimes whole leaves perish in that way, but the cause is a mystery. Few or no plants are quite without some of the older leaves in this state, and I lately saw an otherwise fine plant in which nearly every leaf was withered at the point, although the plant was growing freely at the time. J. S. W.

French Marigolds, with a little care, may be lifted and potted without losing a leaf or showing signs of distress in any way, and they will keep on blooming almost as well as if undisturbed. About a month ago I lifted a plant by way of experiment, cramming the roots into a pot just large enough to hold them, and that plant now carries a score of bright flowers, while those in the open are blackened by frost. Marigolds show themselves off to great advantage under glass at this time of year when the beauty of the outdoor garden is over. Those having conservatories to decorate would find them useful, and it would be worth while putting out a few plants expressly for that purpose, setting them a foot apart, so as to admit of their forming compact, dwarf, bush-like specimens. Plants which have bloomed through the summer and autumn will, however, do very well, taking care to pot them up before autumnal frosts tarnish their beauty. There is a great difference in the growth of the various strains of Marigolds, some not running more than from 9 inches to 1 foot in height, others attaining a height of 18 inches, whilst the Scotch strains grow even taller. I think the dwarf-habited strains with moderate sized blooms far before the more robust-growing, large-flowered ones.—J. C. B.

Oil stoves.—A correspondent, I see, enquires as to the usefulness of these for warming purposes. Perhaps my experience may be of some use to him. We put up recently a glass shed 30 feet long by 10 feet wide and 11 feet high at the back; its principal use is for storing Tree Ferns, large Fuchsias, Pelargoniums, Abutilons, and similar things used for the decoration of the grounds in summer. We avoided the introduction of ordinary heating media—hot-air flues or hot-water pipes, because generally when either of these methods is used there is a tendency to over-heat, especially during cold weather, with the result that the plants are induced to grow at a time when they should be at perfect rest and to generally commence their spring growth too soon—our desire being to set them outside before growth began. We therefore got a couple of Ripplingill's smaller-sized stoves. They are about 18 inches high. These give off quite enough heat to maintain a safe temperature in a house of the size just named. When these stoves are new and are first lighted there is a little smell of varnish, but that soon wears off; and on each occasion when lighted there is just a little smell of oil, not enough to be objectionable in our case, but in that of a conservatory adjoining a dwelling house, where it would be objectionable, a stove of this kind might be placed outside for an hour after lighting, after which there is no smell that anyone could object to. I think there is a future for stoves, by combining with them a hot-water tank, when a most useful propagating apparatus would be the result. The length of time during which they burn without attention, and the regular degree of temperature so easily maintained, combine to produce just the conditions a propagator requires, to say nothing about economy in the way of fuel.—T. SMITH, *Newry.*

Russelia juncea.—This is one of the best of all stove plants for supplying graceful green material for associating with the choicest arrangements of cut flowers. I saw some nice plants of it at Cheltenham the other day, and when their foliage was cut and placed in some elegantly filled vases it gave them an exquisite finish, such as they could not otherwise have possessed.—CAMBRIAN.

Yellow-leaved Coleus.—M. Leseur, gardener to M. de Rothschild, at Paris, recently exhibited a *Coleus* named *Marie Bacher*, raised by M. Chantrier, gardener at the Château de Karadoc, Bayonne, which has perfectly yellow leaves, and which become brighter in full exposure to the sun. M. Leseur has given it a fair trial, and declares this peculiar feature claimed for it by the raiser to be well marked.—J. CORNHILL

GARDEN FLORA.

PLATE 470.

THE GAILLARDIAS.

(WITH A COLOURED FIGURE OF *G. ARISTATA* GRANDIFLORA.)

AFTER a long and persistent course of unreasonable neglect, and, indeed, almost entire annihilation, these charming and unique border flowers are, we are glad to say, once more receiving the attention which their singular merits have long



Gaillardia pulchella var. *Loreziana*.

deserved, and the more so, for since coming under the notice of the hybridiser, the selector, or the careful cultivator, the size of the blooms and their variety in the way of colours have been so vastly improved, that they may now well claim a first place amongst summer-flowering plants, whether annual or perennial. The number of true species of *Gaillardia* in cultivation at the present time is but limited. Dr. Asa Gray's new "American Flora" includes *pecta* and *Drummondii* under *pulchella*.



Gaillardia pulchella *fistulosa*.

To these species, however, belong a goodly number of really distinct garden forms or varieties, representing all shades of colour, from yellow and orange to intense crimson or purple.

GAILLARDIA AMBLYODON.—This is without exception one of the most useful hardy annuals of recent introduction. It is suitable alike for bed or border, and perhaps the only one not fastidious as regards situation. It is of an extremely free-flowering character, and the flowers, which are throughout of a brownish red, maroon, or cinnabar colour, are very peculiar and quite unique in ap-



pearance. They are 2 inches and often 3 inches broad, and the leaves, which are nearly all sessile, are oblong in shape and rough to the touch. It is easily distinguished by its fine compact habit and very pointed ray florets. It grows about 1½ feet high. It is a native of the sandy prairies of Texas, and is fairly common in gardens. The seeds may be sown in the open border about the beginning of April where they are intended to remain, but this is not absolutely necessary, as they stand transplanting very well. Coloured figures of it may be found in Torrey and Gray's "Flora" and in Meehan's "Native Flowers of North America." In the latter work it is called the Blunt-toothed Blanket Flower.

G. ARISTATA.—This, although very variable both in size of flowers and cutting of the leaves, even in its natural habitats, always retains that robustness of growth and firm, rough-textured leaves so characteristic of it, and which so distinctly mark it under cultivation. It is perennial and is often found in gardens under the name *Richardsoni*, a name not quoted by Dr. Gray in his revision. With us it grows a little less than

acquisition. It seldom attains more than a foot in height. It has small linear, entire, or slightly toothed leaves, and the flowers, which are of a pretty, soft orange-yellow, are beautifully marked with dark purplish veins. It blooms all through the summer months. It is a native of the dry Pine barrens of South Carolina, and even reaches Texas. It is figured in Torrey and Gray's "Flora," and appears in Pursh's "Flora" as *G. bicolor*, and in De Candolle's "Prodromus" as *Polypterus integrifolia*.

G. PULCHELLA.—This is probably the oldest of all *Gaillardias* and most generally cultivated, at least in some of its various forms. It was first introduced a century ago, and fortunately found a quiet home in a country garden during the relapse which until lately had befallen this class of plants. Many varieties undoubtedly belong to this species, and some aver that *G. aristata* has also some connection with them. This confusion may, however, have arisen through a form of *G. pulchella* having been distributed under the name of *G. aristata*. All the varieties have been examined carefully, and not a trace of the per-

teeth. This is the *G. bicolor Drummondii* of the *Botanical Magazine*, t. 3368, and the *G. picta* of Don. Amongst other varieties that may be



Gaillardia lanceolata.



Gaillardia pulchella grandiflora maxima.

2 feet in height, but seems to vary, as the description in the "Botany of California" gives only a span. When well grown it is a very handsome plant, but in damp, low localities it hardly ever develops its rays beyond the involucre. The flowers with us are never less than from 4 inches to 6 inches broad, are of a pale uniform yellow, disc purple, with hardly if ever a tint at the base of the ray florets. The leaves are always broad lance-shaped, and partly stem-clasping, and the whole plant is covered with coarse hairs, which are most marked on the unusually large and irregular involucre. The ray florets are always trifid, but this is not characteristic. It flowers from July, and is still in the open air (November 21) flowering freely. It is a native of Columbia, Oregon, South Colorado, and even to California. Illustrations of it occur in the *Botanical Magazine*, t. 2910. Its synonyms are *G. bicolor* of Hooker, *G. bicolor* var. *aristata* of Nuttall, *G. rustica*, Cass., and *G. lanceolata*, D.C.

G. LANCEOLATA.—This is also a perennial species, and though as yet sparingly in cultivation, it is a very beautiful and singularly marked species. It generally grows about 2 feet in height, and is always densely covered with short, stiff hairs, which enhance its appearance considerably. Owing to its neat, compact habit, this plant is well entitled to a prominent place on the rockery, where its sweetly-fragrant flowers will no doubt prove an

manent characters, so characteristic of *G. aristata*, have been found in them; on the other hand, however, there is overwhelming proof of their being varieties or cultural developments of *G. pulchella*. The typical *G. pulchella* seldom grows more than a foot high; it is of perennial duration, though erroneously classed among annuals. It is diffusely branched from the base, forming loose natural, bushy tufts; the leaves are much softer than those of *G. aristata*, and nearly always pinnatifid, and not stem-clasping. The flowers are a little over 2 inches in diameter, ray florets always two-coloured, golden yellow at the tips, and blending half way down into red or dark purple, which becomes intense towards the base. It flowers freely all summer, and is a very useful border plant. It is a native of Louisiana, Texas, and Arizona. *G. pulchella* is synonymous with *G. bicolor* of Lambert and the *Botanical Magazine*, figure 1602, and also figure 3551 in the same magazine as *G. bicolor* var. *Drummondii integrifolia*; it is *G. Drummondii* of the "Prodromus" and *Virgilia helioides* is also a synonym. These may be forms, but all are now classed under *G. pulchella*.

G. PULCHELLA VAR. PICTA, which for garden purposes differs little from the type, unless in having more succulent leaves and having shorter and stouter bristles on the receptacle, and also in having a distinct mark between the two colours, the yellow part extending only to the end of the

mentioned are *G. grandiflora*, a fine vigorous form with large and superb coloured flowers, but which is surpassed by *G. maxima*, which often attains 6 inches in diameter, and not unlike a large coloured *Helianthus multiflorus*. *G. picta* or *tricolor* is also a handsome and desirable variety of singular merit. There are others, such as *Loiselli*, *Bosselari*, *Telemachi*, and *hybrida*, all differing more or less in intensity of colour, but *G. Lorenziana*, a large double-flowered form, is exceedingly beautiful. It seems to come in some of the forms singly, not probably having set, and all stages may be seen between the single and double forms. Var. *fistulosa* and *Aurora Borealis* are also desirable.

Among desirable species not in cultivation the following may be noted:—

G. ACAULIS, similar in aspect to *Valeriana montana*; leaves sagittate, firm, and smooth, rising from a short stem; flower-stalks about a foot in height, light sulphury yellow, and large. Native of Arizona and perennial.

G. SIMPLEX, more straggly than the above, leaves divided, with purple flowers.

G. BRASILIENSIS, a beautiful little perennial species, with finely-cut Fern-like foliage and purple and yellow flowers. The others are *Doniana*,



Gaillardia pulchella var. *Aurora Borealis*.

pinnatifida, and *scabiosoides*, the latter especially being not unlike *G. braziliensis*.

G. MEXICANA, probably a true species, though also referred to *G. pulchella*, is of no appreciable garden value.

CULTURE.—Most Gaillardias are of perennial duration, although they generally succumb to our trying winters, unless in extremely favoured localities or with a little protection. In the instance of *G. pulchella*, which is often on this account cited as an annual, it will stand very well in dry, sandy soil in warm positions. But even were the possibility of their living through the winter doubtful, they may be perpetuated by cuttings with the greatest ease; they strike freely taken off in autumn and treated in the same manner as that practised in the case of *Pelargoniums*, &c., i.e., in a cool frame where frost is excluded, or they may be raised from seeds, which ripen freely. Sown in spring about March, they may be had in flower almost as soon as those that may have succeeded in living through the winter.

When Gaillardias are planted in mixed borders a warm dry situation should in all cases be chosen, and where they will get plenty of sun, the soil light, rich, and of a porous nature, loam, leaf soil, a fourth of well-rotted manure, and plenty of sharp, coarse river sand.

However well they may look in the above position, and no one will doubt their appropriateness, I prefer devoting a bed or short border entirely to the numerous varieties cultivated, or a small bed to each shade of colour as taste may dictate, and as they have a profuse flowering habit and long continuance in bloom, from early summer and, in such open seasons as the present, until the middle or end of November, they are much better when kept by themselves. For overhanging ledges or covering bare unsightly banks in or near a rocky they are also desirable, and in such places, owing to the better drainage, seven in ten may be safely wintered. On the Continent, they are said to be used with surprising effect in bedding or clumping on smooth lawns. Some of the larger and finer sorts, such as *maxima Tele-machi*, *picta splendida*, and others, may be advantageously used for greenhouse decoration, more especially as their flowers seldom measure less than 5 inches or 6 inches in size, with a corresponding intensity of colour when the plants have been liberally treated.

The cultivation of Gaillardias in naturally damp localities and where the soil is of a stiff nature, though presenting many difficulties, may in part be overcome, and a fair amount of success obtained by mixing rubble with the soil and raising small mounds or hillocks on which to plant them; the highest and most exposed positions should be always chosen.

D. K.

Cape of Good Hope Plants.—A correspondent (Rondebosch) residing at the Cape has sent us the following interesting collection of flowers gathered upon or in the neighbourhood of Table Mountain:—

Romulea caulescens
c. var.
Babiana rubro-cerulea
Gladiolus angustus
Watsonia alchitoides
Crassula jasminea
Erica lateralis
grandinosa
cerinthoides
persoluta (?)

Erica Peterveriana
hybrida (?)
Wilmoreana
incurva
glomerata
Psoralea aphylla
aculeata
Cyclopia genistoides
Berzelia abrotanoides
lanuginosa

Some of these are plants rarely seen in gardens here, though most of them have been introduced at one time or another. The *Ericas*, for instance, are, some of them, unknown to gardeners of to-day, though, according to Andrews, they were cultivated in this country eighty years ago and were figured by him in his beautiful "Illustrations of Heaths." There are at the Cape numerous species of *Erica* that both for their rich colours and distinct, often curious, forms are deserving of re-introduction. Amongst the bulbous plants here represented are several well-known favourites, though the *Romuleas*, or *Cape Crocuses*, are somewhat rare with us, notwithstanding their pretty *Crocus*-like habit and flowers. The *Psoraleas* are plentiful in South Africa, and are represented both in the shape of shrubs and herbs. They are leguminose plants, with flowers mostly blue and borne in close heads; their leaves have a strong

resinous odour. *Cyclopea* is another genus of Leguminosae, with yellow flowers. *Berzelia* is a genus of *Brunoniads*, Heath-like in habit, and with flowers in globose, terminal heads, white, not unlike those of a *Diosma*.—B.

FRUIT GARDEN.

HARDY FRUITS FOR THE MIDLAND COUNTIES.*

THE following notes on hardy fruits are given, not so much as the result of my own experience as because I have perhaps exceptional advantages in being able to cull from the experiences of three generations before me on a scale which for some kinds of fruits (notably Apples and Pears) is seldom equalled in this country, and certainly not in this district. My great grandfather and grandfather planted somewhat over 100 acres of orchard, principally Apples, Pears, and Plums, and the greater part of these orchards exist to-day, although many of the trees have been re-worked with kinds which have proved more profitable than those originally planted. We have heard a good deal lately of fruit growing and orchard planting, and in these days of agricultural depression, when landowners and occupiers are looking in every direction for help, even "jam" has been held out as a sheet anchor. Such being the case, some hints from experience gained at Chilwell may be useful. I shall divide my subject into, first, the formation of orchards, and, second, the best sorts of fruit to grow, confining myself to the hardier kinds.

FORMING AN ORCHARD.

When we begin to form an orchard, the first things we have to consider are the soil and situation. The stronger soils of the new red sandstone formation are considered very favourable to the growth of fruit trees, and, indeed, the greater part of this county, from Tuxford on the one side, to Chilwell on the other, can show specimens of fruit tree growth which are rarely to be met with; a *Marie Louise* Pear 56 feet in height, *Beurré de Capiaumont* 53 feet, and *Besspool Apples* 35 feet high by 50 feet in spread, are worthy of notice. Of course the stronger soils are *par excellence* the soils for fruit trees, and orchards planted on them will last for generations; on the gravels and lighter soils many varieties will do well and bear heavily, but the trees are not so long lived. Almost any soil will grow fruit trees of some description. This is evident from the trees which may be found in every cottage garden. The chief thing to be guarded against is stagnant water in the soil. There is nothing which fruit trees resent so much as this, and the first care in making an orchard should be to insure good drainage for the land. Next to soil comes situation; as a rule, slopes exposed to the south or west are best. An eastern aspect is not desirable, from the fact that it catches the early morning sun, which in the case of a severe spring frost thaws the frozen blossoms too rapidly, and thus ensures their destruction. One of the chief objects, however, is shelter from the prevailing strong winds. Where natural shelter exists, it should be taken advantage of, and in many cases where a large orchard is to be made, it would pay to plant a belt of quick-growing timber trees, such as Poplar, Larch, or Siberian Elms, to form a break from the wind, but where this is done the fruit trees must not be planted too near, for it must be borne in mind that a fruit tree, however vigorous, cannot compete with strong-growing forest trees. Ash trees especially rob the soil to a great distance; one may see their effects in any arable field where they are found in the hedgerows. Where no other shelter exists the hedges may be allowed to grow for a few years, and a good Thorn hedge 10 feet or 12 feet high keeps out a great deal of wind. When once the orchard is established the trees will take care of themselves, and the hedges may be cut down. Again, in planting much may be done by selecting the strongest-growing kinds for

the outside rows. A large pond or stream is not a good neighbour for fruit trees, as the damp rising from the water will often make the difference between a spring frost injuring the bloom or not. In forming an orchard we must decide whether the land is to be laid down to Grass or kept tilled.

GRASS ORCHARDS.

Where any large quantity of land is about to be planted, and especially in the case of a farm orchard, I should strongly recommend the land to be in Grass, because the prime cost is so much less and the subsequent management so much more simple. Where the area is small, and where the orchard is to be in the care of a professional gardener or a market gardener, of course tilled land presents many advantages. Let us take first, then, the formation of a large orchard, say from ten to fifty acres. This is a question which is engaging the attention of many landowners who have farms on their hands which they do not know how best to profitably cultivate, and I have many times during the past few months been called in to give advice on this matter. This class of orchard should be subsequently laid down to Grass, but the land, if arable, should have all the cultivation possible previous to the trees being planted. Knowing, as we do, how far the roots will go in search of food, we are convinced that money spent in well breaking up the land previous to planting, whether by deep ploughing or, better still, by steam cultivation crossing the land both ways, is money well spent; even after the trees are planted they will thrive much the best on land that is cultivated for two or three years. The crops grown should be Potatoes, Mangolds, or Turnips, and a space be left on each side of the tree, so that the plough may not come too near the trees, or the singletrees bark them in passing. This space left around the trees must be kept clean by hoeing. If, as in cases I have seen lately, the spaces are allowed to be overgrown with Twitch (Couch Grass), they had better have been covered with good Grass at first. Corn crops should not be grown between fruit trees, as they punish the land too much. And here let me say never mow orchard Grass; I have tried it, and find it the most ruinous thing one can do. Fruit trees will not carry large crops or fine fruit under such treatment. If the soil and situation permit, it will be a capital preparation for both the fruit trees and the coming Grass to eat off a crop of Turnips on the land, care being taken to protect the stems of the fruit trees with bunches of Thorns tied round them, or a small roll of wire netting which will expand as the tree grows. Where game abounds these precautions must also be taken against the attacks of hares, which do much mischief by barking the stems. With respect to manure, I do not advocate its use in large quantities at the time of planting. If the land be in fair condition, the trees will make good growth of themselves for the first year; but if they require manure, it is much the best applied as a surface mulching or to crops grown on the land. If the manure be above the roots, they are bound to get it, and our object should always be to tempt them upwards to the surface. After the land is laid down to Grass it will be found that sheep and young stock eating cake will improve the orchard. Heavy stock should be kept out until the trees are well grown, and horses strictly excluded.

PLANTING.

The trees that are planted in this class of orchard will of course be standards; they should be planted in echelon form, 20 feet to 24 feet from tree to tree, the distance varying with the character of the soil and the habit of the trees. Holes should be got out 3 feet square and 2½ feet deep; if it be on old turf land make them larger, for then you are, so to speak, placing them in pots, and they should have plenty of room to start; in this case cut up the top spit and mix it with the soil to go about the roots. In ordinary good soil it will only be necessary to replace the soil taken out, taking care that the roots of the trees are spread out before filling in the soil, and

* Paper read by Mr. A. Pearson, Chilwell Nurseries, before the Nottingham Horticultural and Botanical Society.

that they are not buried too deeply. No mistake is more frequently made than that of planting fruit trees too deeply, and few things are more deleterious to their success. The mark on the stem where it was planted up to in the nursery will be a good guide, but it may be taken, as a rule, that from 3 inches to 4 inches of soil above the roots is ample. I have several times found trees doing badly from this very cause, and have been told it was necessary to plant deeply to keep the trees from rocking, as the situation was exposed. In reply to this, I say every standard tree ought to be securely staked when planted, using hay-bands as ties to prevent the tree from chafing. As we all know, it is quite impossible for a tree to grow if each wind rocks it to and fro and tears off all the young points of the roots which are endeavouring to establish themselves; hence the necessity of securing by means of staking or stays all standard trees or such as present a large surface to the wind compared with the size and weight of their roots. With regard to the best time for planting, I would choose November, as the trees have then a little sap left in them, which on descending nourishes the roots, and in many cases causes them to make fresh growth before the winter. Still, as all the work cannot be done in November, we may with safety continue, in the absence of frost, to plant up till the end of February or early in March.

TILLED ORCHARDS.

Let us now turn to the tilled orchard; here the land between the rows of standards may be planted with pyramid or bush Apples, Pears, Plums, or Nuts or small fruits, such as Gooseberries, Currants, Raspberries, Strawberries, &c. The selection should be made with due regard to the market value of the fruit when grown, the amount of labour available (a serious question in these days of school boards and high wages), and the character of the soil. Speaking roughly, Apples, Pears, Plums, and Strawberries will succeed best on strong land, Black Currants in a moist situation, Red Currants and Gooseberries almost anywhere, Nuts where nothing else will grow, although they repay a better position. The distances apart will vary with the kind of tree and the soil. Tables for the use of planters will be found in every gardening annual and in nurserymen's catalogues, so that I need not trouble you with one. Previous remarks as to deep planting will apply to bush or pyramid trees, but they should be well secured by trampling the soil about the roots. Manure should be applied when required by digging in during the winter on strong land, and on light soil by a top-dressing after the digging has been done. In plantations containing small fruits care should be taken not to dig closely to them, as any disturbance of the surface roots is injurious. This is especially the case with Raspberries, which are very impatient at being disturbed with any digging beyond taking off the suckers. Judgment should be used in the application of manure, as too much may be used as well as too little. Our object should be to obtain a free growth, but well ripened; if over-forced, the shoots will be gross and continue growing late in the season, when they are liable to suffer from frost. Especially when trees are in a bearing state it is necessary that the wood should be well ripened, and I attribute the recent failures in fruit crops more to the sunless summers which have prevailed of late than to the spring frosts. These latter we rarely escape altogether, but they are comparatively powerless where the wood and flower-buds are well ripened; hence we ought to hope for a crop of fruit after the present almost unique summer and autumn.

Select List of Apples.

I take it for granted that in planting orchards on any scale the fruit is intended for market, and we must consequently be guided in some measure by the local demand. Amongst large fruits Apples are the most generally useful; but looking at the competition in fruit from America and the Continent, I think the more perishable Pears and Plums should not be neglected, as freshness will always tell in favour of the home grower. The

Damson, too, is universally esteemed, and now that the dyer will purchase them by the ton, to say nothing of the jam maker and (shall we hint it?) the port wine maker, they must be a profitable crop to grow.

COOKING APPLES.

EARLY SORTS, TO SELL AS GATHERED.—Cellini, *Domino, Golden Nugget, Frogmore Prolific, New Hawthornden, *Keswick Codlin, Improved Keswick, *Warner's King, Lord Suffield, Potts' Seedling, *Russian, Spencer's Favourite, Worcester Pearmain.

COOKING APPLES FOR STORING.—Alfriston, Small's Admirable, *Beauty of Kent, *Brambley's Seedling, New Caldwell, *Normanton Wonder, Northern Greening, *New Northern Greening, Stent's Incomparable.

CELLINI (October and November).—Fruit rather above medium size, roundish, and flattened at both ends; skin deep yellow, beautifully streaked with red next the sun; flesh white, tender and juicy, with a brisk aromatic flavour. A culinary Apple of the first quality. Tree spreading grower; good as standard or pyramid; a regular bearer.

DOMINO (October).—Fruit large, resembling the Keswick Codlin in shape; skin yellow, spotted next the sun; a good cooker. Tree close grower, but making a good standard; scarcely ever fails to produce a heavy crop. (I do not find this variety in Dr. Hogg's "Fruit Manual," and it is quite unknown to the majority of the nursery trade. It is, nevertheless, by far the best of the Keswick class, and sure to be planted in quantity.)

GOLDEN NUGGET (October and November).—Fruit large, resembling Warner's King, but of beautiful gold colour. Tree free grower and good cropper. This variety was much admired at the Nottingham autumn show last year.

FROGMORE PROLIFIC, OR PIPPIN (September to Christmas).—Fruit large, roundish, regular in outline; skin pale greenish yellow shaded with crimson next the sun; flesh white, tender, and juicy. Tree very compact grower and great bearer. Never makes a good standard, but as a pyramid it is unrivalled for early and heavy cropping. Raised at Frogmore by the late Mr. Ingram, and considered one of the finest cooking Apples sent into the royal household. We see no difference between this variety and Old Hawthornden, excepting that it is rather a better grower.

HAWTHORNDEN, NEW (December to January).—Resembles the preceding variety, but keeps much longer. A most valuable variety for bush or pyramid culture; must be allowed to grow with little pruning, as it produces fruit on the points of the shoots.

KESWICK CODLIN (September to October).—Fruit too well known to need description. Tree compact grower, pendulous habit, forms a handsome pyramid; free cropper, extremely hardy, standing the spring frost well.

IMPROVED KESWICK.—Resembles its parent, but keeps longer.

WARNER'S KING (October to March).—Fruit very large, smooth and clear greenish yellow; flesh white, tender, crisp, and juicy, fine sub-acid flavour; a first-rate cooking variety. Tree vigorous and spreading, of very distinct growth from any other kind.

LORD SUFFIELD (September).—Fruit very large, skin smooth, pale greenish yellow; flesh white, tender and firm, very juicy. One of the very best early kitchen Apples. Tree generally recommended as a pyramid on account of its being such an abundant cropper and the fruit being so large and heavy. We have some very large trees worked as standards in our orchards which bear heavily and produce fine fruit. In cold or wet situations this tree is liable to canker.

POTT'S SEEDLING (September to November).—Fruit very large and perfect in shape; flesh firm, white, and juicy. Tree very handsome, forming excellent pyramids, very prolific; a valuable baking Apple.

RUSSIAN, OR DUCHESS OF OLDENBURGH (September).—Fruit medium size, fine shape; skin smooth, greenish yellow streaked with red, and carrying a bloom like a Plum; flesh yellowish white, firm, crisp, and very juicy, with a pleasant, brisk, and refreshing flavour. Tree moderate grower, rather pendulous habit. For cooking this is a variety of the highest excellence, but most of the London and southern authorities class it as a table Apple. As its name implies, it is of Russian origin, very hardy, and a great and regular bearer. My opinion of it coincides with Canon Hole's opinion of Gloire de Dijon Rose. If I were a "pike keeper" and had one Apple tree, it should be a Russian.

SPENCER'S FAVOURITE, OR BROWN'S SEEDLING (October to December).—Fruit large, round, and handsome; skin smooth, clear bright yellow; flesh yellow, tender, and breaking, of a clear amber colour, perfectly melting. Tree makes a very handsome standard, regular bearer.

WORCESTER PEARMAIN (August and September).—Fruit medium size; skin smooth, completely covered with brilliant red; flesh very tender, crisp, juicy, and sweet. The tree is a great bearer, and from the beauty of its fruit will always be a favourite market variety.

ALFRISTON (November to April).—Fruit of the largest size; skin greenish yellow tinged with orange next the sun, covered all over with veins of russet; flesh yellowish white, crisp, juicy, sugary, and briskly flavoured. The tree is a strong and vigorous grower, very hardy, and an abundant bearer. This is one of the largest and best late culinary Apples.

SMALL'S ADMIRABLE (November and December).—Fruit medium size, handsome; an excellent kitchen and dessert Apple. The tree is an immense bearer, and well adapted for dwarf culture.

BEAUTY OF KENT (November to January).—A valuable and now well-known culinary Apple; when well grown the Beauty of Kent is, perhaps, the most magnificent Apple in cultivation. Its great size, the beauty of its colouring, the tenderness of its flesh, and a profusion of sub-acid juice constitute it one of our most popular winter Apples for culinary purposes. The tree is a strong and vigorous grower, attains a large size, and is a good bearer.

BRAMBLEY'S SEEDLING (November and December).—Fruit enormous. Mr. Brown, of this town, showed this autumn forty, taken from an ordinary standard tree, which weighed 41 lbs. Skin smooth, bright green colour. Tree a very free bearer. Obtained first-class certificate in 1883.

NEW CALDWELL (January).—Fruit over medium size; skin smooth, yellow, dashed with red. Tree a very vigorous grower, suitable for a standard; a better bearer than the Old Caldwell or Rymer.

NORMANTON WONDER, DUMELOW'S SEEDLING, OR WELLINGTON (November to March).—Fruit large; skin yellow, spotted with crimson next the sun; flesh firm, crisp, juicy, and acid. Tree hardy and a good bearer. Under its various names this is perhaps as well known as any Apple grown. One of the finest baking Apples in cultivation.

NORTHERN GREENING (November to April).—Fruit above medium size, skin smooth, colour grass-green, inclined to be streaked with red next the sun. Tree vigorous, upright grower, good cropper. An excellent kitchen Apple.

NORTHERN GREENING, NEW (November to April).—This is a great improvement on the old variety; the fruit is much larger and is more highly coloured. Tree a good grower, and succeeds well either as a standard or dwarf. A very valuable cooking Apple. As a market Apple it has the recommendation of weighing well.

STENT'S INCOMPARABLE (December to March).—Fruit very large, greenish yellow, very dark red next the sun, sound, brisk, and aromatic. The tree is a good grower, bearing its fruit at the end of the branches, in spite of which it makes an excellent kind for exposed situations, as the fruit clings very firmly; a regular heavy cropper.

DESSERT APPLES.

The list of kinds used for dessert will necessarily be short, as although there are many which are of great value for the garden or orchard of the amateur, we are now looking at them with a view to profit, and must have quantity as well as quality. I shall mention Blenheim Orange, Bridgewater Pippin, Cox's Orange Pippin, Herefordshire Pearmain, Irish Peach, Mr. Gladstone, Pike's Pearmain, Peasgood's Nonsuch, Wollaton Pippin, and Waterloo.

BLENHIM ORANGE (November to January).—Fruit large, round, and flattened, yellow, tinged with red next the sun; flesh yellow, crisp, and juicy. The common complaint against the Blenheim Orange is that the tree is a bad bearer, and this is undoubtedly the case when it is young, being of a strong and vigorous habit and forming a large and very handsome standard; but when it becomes a little aged it bears pretty regularly and abundantly. Grafted on the Paradise stock, and grown as a bush or pyramid, it may be made to bear much earlier, and to produce very fine fruit. This well-known old Apple is classed by nearly every authority as more fit for cooking than for the table. I venture, however, to assert that in this locality it is far more of an eating Apple than a cooker.

BRIDGEWATER PIPPIN (November to December).—Fruit large, roundish, with prominent ribs; skin yellow, streaked with russet. Tree a good grower and fair cropper. Classed in the "Fruit Manual" as a cooker; we consider this an excellent table fruit.

COX'S ORANGE PIPPIN (October to February).—Fruit medium size, regular in shape; skin greenish yellow, beautifully streaked with red; flesh very tender, rich, and juicy, with fine perfume. Tree makes a small standard, but is admirably adapted for dwarfs or pyramids. Succeeds well on the Paradise stock. One of our finest table Apples and ought to be extensively planted.

HEREFORDSHIRE PEARMAN (November to March).—Fruit over medium size; skin smooth, and when ripe clear greenish yellow streaked with red; flesh yellowish, tender, crisp and juicy. The tree attains the middle size, is a free and vigorous grower, very hardy, and an excellent bearer. Mr. Ingram, of Belvoir, says of this Apple that during the past ten or fifteen years it has never failed with him to carry a heavy crop.

IRISH PEACH (August).—Fruit medium size; skin greenish yellow, fine lively red spotted with yellow on side next the sun; flesh tender and crisp, abounding in a rich, brisk, and aromatic juice. Tree moderate grower, makes a nice standard, an abundant bearer, has carried good crops with us for seven years in succession. Without doubt one of the best early dessert Apples. Like most summer Apples, it is in greatest perfection when eaten from the tree.

MR. GLADSTONE (August).—Fruit medium size, bright crimson-scarlet skin; flesh juicy, with rich aroma. Tree of rather pendulous, medium growth. Although this Apple is of recent introduction, and has not yet had time to be fully tested in the midlands, the young trees in our nursery give indications of its being a first-class cropper, and it has gained such a character for hardiness and abundant cropping in the market gardens of Kent, that I think I may venture to recommend it.

PIKE'S PEARMAN, OR KING OF THE PIPPINS (October to Christmas).—Fruit medium, conical; skin golden yellow, streaked with crimson next the sun; flesh firm, juicy, with a nutty flavour. The tree is a strong and vigorous grower, a most abundant bearer, and attains a considerable size; it is also very hardy and will grow in almost any situation.

PEASGOOD'S NONSUCH.—Fruit large and very handsome; skin yellow, covered with crimson streaks, which on the side exposed to the sun are very vivid; flesh yellowish, tender and very juicy. This is another new Apple of which we hear favourable reports from various parts of the country.

WOLLATON PIPPIN, COURT PENDU PLAT (December to June).—Fruit medium size; skin green,

changing to yellow when fully ripe, deep red next the sun; flesh firm, crisp and well flavoured. Tree such an abundant bearer, that it makes but small growth. The blossom of this kind expands later than that of any other variety, and thus escaping the spring frosts, it has in some parts of the country gained the name of "Wise Apple." The Wollaton Pippin is particularly adapted for pyramid culture, as it frequently bears the first season after planting. We generally gather several pecks of fruit from a flat of young trees in the nursery.

WATERLOO PIPPIN, DEVONSHIRE QUARRENDEN (September).—Fruit rather under medium size; skin smooth and shining, colour deep purplish red; flesh crisp, very juicy, and with a rich vinous flavour. Tree attains a considerable size and is a prolific bearer. It succeeds well in almost every soil and situation and is grown from Devonshire to the Moray Firth. Before leaving the Apples let me direct attention to the Paradise stock so often mentioned. There are several varieties of Paradise stock, and the reason that some people have failed to grow good Apples on this stock is because the wrong one has been used. My father and the late Mr. Thos. Rivers, after trying them all, selected one which has been propagated at Chilwell ever since.

Standard Pears.

There are so few Pears out of the multitude that are recommended that are really suitable for standard trees in this district, that I will take them first, giving a list of those suitable for growing on the Quince subsequently.

DOYENNE D'ETE, * WILLIAMS' BON CHRETIEN, * HESSEL, * DOYENNE BOUSSOCH, BEURRE DE CAPIAUMONT, BEURRE GREY.—A very small list, it will be said. I could extend it with other sorts which will undoubtedly fruit as standards, but for profit I think these are all.

DOYENNE D'ETE (July).—Fruit small and roundish; skin smooth, of a fine yellow colour, beautifully streaked with crimson next the sun; flesh white, melting and very juicy, fine flavour, but should be gathered before fully ripe, or it gets mealy. Tree a vigorous grower and an abundant cropper, one of the best on the Quince stock.

WILLIAMS' BON CHRETIEN (September).—Fruit large and handsome; skin smooth, clear yellow, streaked with red next the sun; flesh white, tender, melting, with delicious flavour. Must be gathered before ripe, or it turns musky and will not keep. Tree a good grower, heavy bearer, and makes a fine pyramid.

HESSEL (October).—Fruit below medium size, skin greenish yellow, very much covered with russet; flesh tender, very juicy and aromatic. Tree hardy, vigorous and great bearer. Succeeds in almost any situation, and is perhaps more widely grown than any Pear.

DOYENNE BOUSSOCH (October).—Fruit large; skin lemon coloured, covered with large, rough russety dots; flesh yellowish white, melting and juicy, with brisk vinous flavour. Tree free and vigorous grower, great bearer. This variety only requires to be known to be appreciated. During the past eight years a large standard in our orchard has never failed to carry a crop, and seven of them have been heavy crops. Essentially a market Pear.

BEURRE DE CAPIAUMONT (October and November).—Fruit medium sized, long; skin yellow, almost entirely covered with fine cinnamon-coloured russet; flesh white, rich and melting. Tree vigorous, upright grower, bears in profusion, very hardy. Succeeds well on the Quince.

BEURRE GREY (October).—Fruit medium size, russet-coloured; flesh melting and very juicy. Tree makes a good standard and bears heavily.

For pyramids on the Quince stock the following grand Pears may be recommended, and with thinning and mulching they will produce fine fruit fit for dessert which may be sold by the dozen:—

BEURRE D'AMANLIS.—Large, very free bearer.

BEURRE DE CAPIAUMONT.—Previously described.

BEURRE SUPERFIN.—A very fine dessert Pear of large size and a good bearer.

BON CHRETIEN.—Previously described.

CONSEILLER DE LA COUR.—Large, melting Pear, excellent in quality. Tree vigorous, and forms a splendid pyramid.

DE TONGRES.—Best described as a large, handsome Beurre de Capiamont.

DOYENNE D'ETE.—Previously described.

DOYENNE BOUSSOCH.—Previously described.

DOYENNE DU COMICE.—Large, handsome fruit, quality unsurpassed; bears well on the Quince.

JOSEPHINE DE MALINES.—Small, but grown on light land perhaps the best of all late Pears. On cold soil requires a wall; good bearer.

LOUISE BONNE DE JERSEY.—Large, remarkably handsome, first-rate quality, one of the best Pears we have on the Quince.

MARIE LOUISE D'UCCLE.—Resembles the old Marie Louise, but is more hardy, a better cropper, and, unlike Marie Louise, does well on the Quince.

Plums.

The importance of the Plum as a market fruit can scarcely be over-rated. Owing to the short distance these trees can be planted apart (about 15 feet) they very soon produce enough fruit to pay expenses, and in spite of the enormous imports from abroad the fruit always commands a good price. Plums are especially suited to cultivated orchards. Where stock have access to the trees they often damage the weaker growing sorts.

In describing orchard Plums I think I might use the words of a friend of mine in the nursery trade and say, "Vics first and the rest nowhere." Nevertheless, after the Victoria, which needs no description, I may mention as good orchard Plums the following:—

DIAMOND.—Large, handsome purple Plum, very fine for cooking. Tree grows very large.

GOLIATH, OR CALEDONIAN.—A large, roundish Plum, dark reddish purple, heavy cropper, good for cooking or preserving.

MRS. GIBBORNE.—Medium, yellow, good bearer.

THE CZAR.—Raised by Mr. Rivers. This is likely to prove our most valuable market Plum. Early, bearing in clusters, purple, having a fine bloom. The tree is a good grower and makes a fine standard. At Sawbridgeworth it bears immense crops of fruit, and the demand for trees in the Kentish plantations is so great that for several years past the nurserymen have been unable to supply the quantities required.

Under the heading of Plums we must take the Damsons, and of this class I consider the Damascene or Prune far away the best. It is a good cropper, and the quality is not to be compared with that of any other variety. I have spoken before of the uses to which Damsons are put. The Prune Damson always commands a high price for tarts and jam making.

THE FARLEIGH PROLIFIC, OR KENTISH CLUSTER, is a mere wildling of coarse quality, but an enormous cropper. Mr. Bunyard in his work thus describes it: "The profusion of fruit it produces can scarcely be credited, and so large is the growth that it is customary in estimating crops to treat of them by the ton. One grower took 3000 bushels in one (scarce) year and made 14s. per bushel of them." The trees require to be well pruned for a few years until a head is formed, otherwise before there is sufficient strength the first heavy crops break the young shoots and the tree is disfigured for life.

Damsons are rather apt to be broken by heavy gales, as the wood is brittle. They succeed well planted in a thicket, pretty closely together, the thicket running north and south in the orchard. If planted as single standards they should be rather closer than Apples or Pears, as they do not make such large heads. In Cheshire and Derbyshire we find them largely planted as hedgerow trees, and although they make slower growth in such situations, they are sturdy and less liable to be broken and produce heavy crops.

All kinds of Plums should be gathered with a step-ladder, or two ladders tied at the top, until the trees have made good heads. A careless man with a heavy ladder will ruin a young plantation of standard Plums.

Cherries.

It is useless to attempt to grow Cherries on a small scale for orchards, as the birds

Mr. Harrison Weir says so); but if you have not kept one in a cage and fed him on young Cherry shoots in the spring, I venture to say you have not the least idea of the quantity he will eat or how happy he will look whilst doing it. Again, when the fruit is ripe it is ravaged by birds which touch but little of other fruit—notably that most useful bird, the starling. Cherries, then, to be grown in the orchard must be grown in sufficient numbers to make it

grow if one can secure them from the depredations of trespassers. There seems to be a generally conceived opinion in the minds of these people that Nuts are planted for their special benefit. Nuts will grow in bleak situations and on gravelly soils, but will, of course, give the best results under the best conditions. They do very well planted amongst Damsons where they each protect the other. One often hears that Filberts



Arbutus Unedo Croomei. Drawn at Grasmere, Byfleet, in November (see p. 506)

would inevitably take the whole of the fruit unless it were "tented," which would cost more than the fruit was worth. It is surprising how many enemies the Cherry has amongst the feathered tribe. In the spring a few bullfinches will do immense injury by eating the buds just as they are breaking, and loth as we may be to destroy this handsome bird, he must be shot without mercy in a Cherry orchard or Gooseberry plantation. I know his friends say he is only after insects (even

worth while to look after them, and for the same reason it is best to have only one kind, so as to ripen all at once, and thus shorten the time for protection. The one sort I shall recommend is May Duke, one of the oldest and best varieties. The tree is a free grower, of upright growth, a good cropper, and well adapted for orchards.

Nuts.

Although Nuts are somewhat slow in making a return, they are a profitable crop to

will not bear well; the reason of this is that they are deficient in male bloom. If they are planted with other Nuts this is remedied, as the Nut produces a profusion of pollen. This was first discovered at Chilwell by my father. The best varieties are Waterloo, Cosford, Pearson's Prolific, large white Filbert, and Merveille de Bolwyller. Kent Filbert and the red Filbert are of no use in this locality, as they are so frequently cut by spring frosts.

Bush Fruits.

These are the cheapest to buy and the quickest to make a return, but, as I have previously said one must be guided by demand and availability of labour as to whether they are worth one's attention.

As the culture of small fruits is so well understood, I shall content myself by selecting as useful market varieties the following:—

GOOSEBERRIES.—Crown Bob, Lancashire Lad, Rifleman, Whitesmith, Warrington, and Yellow Champagne.

CURRENTS.—Black Naples and Lee's Prolific (Black), Raby Castle (Red). This variety has been rechristened May's Victoria; Houghton Castle, Goliath, Walker's New Red, &c.; being rather late, it comes in after the earliest, and always sells well. It is a free grower, and when acres of other Currants are blighted this variety escapes. To grow it in perfection the shoots should be stopped during the summer growth, under which treatment it is a great bearer.

RASPBERRIES.—The two best varieties are Fastolf, which is a good bearer, fruiting when Red Currants are plentiful, and Northumberland Fillbasket. This latter is the heaviest cropper known, and essentially a market variety, as it is of robust habit and the fruit bears carriage well.

I fear that the foregoing remarks have assumed somewhat of the character of a catalogue, but this, I think, is unavoidable. We read every day in one or other of the horticultural papers a glowing description of some fruit, and forthwith the inexperienced demands that variety from the nurseryman with whom he deals, irrespective of the soil, situation, or climate of the locality where it is intended to plant. If the nurseryman be a fruit grower and ventures to hint that it is not a suitable kind for the position, our friend the purchaser generally thinks it is only because he has not the variety in stock, and goes elsewhere for it. Time was when it was the fashion to grow every variety of fruit which came out, and how many, even in my memory, have I known consigned to the fire in the nurseries and replaced in the garden of the amateur. Amongst Apples and Pears alone I can number upwards of 300 varieties which have been grown in our nurseries and discarded for others better suited to this locality.

TREES AND SHRUBS.

ARBUTUS CROOMEI.

THE common Strawberry tree (*Arbutus Unedo*) is generally admitted to be among the handsomest of hardy evergreen shrubs, yet, handsome as it is, it is surpassed by Croome's variety, of which we illustrate (p. 505) a flowering spray. This variety is so distinct from the various other forms of *A. Unedo*, that there is no mistaking it. Its foliage is much broader, of thicker texture, and of the darkest green, which in contrast with the dull red bark of the twigs forms in itself an attractive feature. Its outline is massive, yet pleasing, and in November, when profusely laden with blush-tinted blossoms and scarlet fruit, it is extremely effective on a lawn. This variety of the *Arbutus* should always be obtained where possible, and now it is not much dearer than the ordinary form. Among other distinct varieties of the common *Arbutus* may be mentioned *crispa*, which has leaves crimped at the edges; *myrtifolia*, with leaves small and narrow; *salicifolia*, with leaves narrow and long; *quercifolia*, with the outline of the leaves wavy; *rubra*, with flowers of a decided reddish tinge; and the double kind (*flore-pleno*), which, however, is not so desirable, inasmuch as it does not set fruit, in which resides the peculiar beauty of the *Arbutus*. *A. hybrida procera* and *hybrida* are quite distinct from the common species. In the southern counties the *Arbutus* is one of the hardiest of Evergreens, and Croome's variety is no exception. Planted where the soil is dryish, the subsoil porous or overlying a rocky stratum, there is nothing to fear from the *Arbutus* suffering

in ordinary winters. Everyone knows that the *Arbutus* is truly native in Killarney, to which it lends a peculiar charm. Our drawing was prepared from some fine flowering sprays brought to us a fortnight ago by Mr. Stevens from his garden at Grasmere, Byfleet.

THE PINETUM A MISTAKE.

WE wish country gentlemen would plant on poor land more than they do, though, so long as they cultivate rabbits to the present extent, planting is not of much use. Unhappily, a great many people are very apathetic about planting, but the most careless are not such enemies to trees as the rabbits with which so many country places swarm. Nothing, we know, destroys young trees in such a way as the rabbit, which, selling at 9d., often succeeds in destroying 10s. worth of trees or shrubs. We have seen some of the choicest plantations in England wholly ruined by these pests. They spoil pretty nearly everything, from the common Holly to the rare Californian Pine.

Such ornamental planting as has been indulged in for a generation or so past has practically taken the form of what is called a pinetum. After much observation of these arrangements in many parts of the country, we are inclined to think them about as poor, fruitless attempts at planting as can well be devised. They are often so thickly grouped that the trees run up and injure each other, but the more general rule is to show isolated specimens dotted about and struggling with the Grass. They are useless, except as mere tests, and not much good as that, because one single specimen of a grafted plant, perhaps by itself in Grass-covered ground, is, after all, but a very poor proof of what the same kind of tree would do if planted in a bold group in the same place, with the ground kept open until the trees had made some headway. The pinetum is ugly, too, in nine cases out of ten. Why should we see half-hardy trees dotted about, when fine bold groups of really proved kinds might cheer the planter's eye? The poor specimens are as useless from an artistic as from a forester's point of view. They half justify the mixed muddle of planting, which too often takes the place of the good plantation, well considered in relation to soil, situation, and climate. They are mere toys looked at from the point of view of the planter for profit. It is the deliberate opinion of some of the best foresters, both abroad and at home, that poor land will pay best if planted with trees; but the notion of planting in England which is popular with most of us will not do at all. The whole system deserves reconsideration by all who are possessed of land that cannot be cultivated with profit. And even the pinetum, a portion of the garden as it generally is, should help us to a better knowledge of forest trees and all others suited for our country. It should be bolder and simpler, composed of fewer things known to be hardy, for there are many such. It should not be merely a museum of grafted and variegated curiosities and "experiments." It should show us bold groups or groves of trees that have beauty, value, and hardiness for our country. Seven well-grown and placed hardy species of Pine would produce a far better effect than seventy of the species and varieties gathered from Mexico to Chili, that now form the sorry pride of our pinetums.

The pinetum is usually a failure in all ways, artistically as well as culturally. People who took pride in such a thing at one time are now groaning over the losses of the past few winters; but it is the usual result of foolishness. Years ago, while they were trying every green thing that could be got from all countries accessible to the British traveller, and many warm and splendid climates like Mexico and California, they should have been planting the proved trees of Europe and the cold north of Asia and America. Of course it is well to try all; but the worst of it is, where all these sticks were put out to die or lead a miserable life, one often looks in vain for any sensible or effective masses or groups of fine species, about the hardiness of which there need be no kind of doubt.

Another objection to the pinetum is the doubtful and troublesome seedling forms it gives rise to. One care of the planter is to secure pure strains of the trees he wants. Owing to the mixed way in which the pinetum is usually planted, crosses are easy, and much of the seed saved therein is of doubtful value and purity.—*Field*.

POPULUS BOLLEANA.—This, says M. Carrière in the *Revue Horticole*, is very hardy and not at all fastidious in respect to soils, even doing well in those of a clayey character. Its pyramidal growth would seem to recommend it for the formation of avenues, and it might advantageously replace the Lombardy variety, which it resembles in growth. Isolated, it produces an equally fine effect, for then, besides assuming a more compact form, it becomes larger whilst preserving its general habit, thus forming an upright, slender pyramid of fine appearance. It is propagated by means of layers and by grafting on *P. nivea*; also from cuttings, which generally strike fairly well.—*BYFLEET*.

SEASONABLE WORK.

FLOWER GARDEN.

ROSES AND SPRING FLOWERS.—We are now having somewhat more seasonable weather than hitherto, and if mulching of Roses has not yet been done, it should be done forthwith. Though mulching of Roses is not an imperative necessity, as they winter safely without it nineteen winters out of twenty, yet there can be no doubt of its beneficial effects in ensuring robust growth, and for that reason alone it should be done. For the tender Tea and Noisette sections, any kind of a mulching is of the utmost value; good farmyard manure, smoothed down with a spade, and over this a couple of inches of Cocoa fibre refuse, is the perfection of mulching. By way of protection to spring flowers, a thin covering of fibre is desirable, and also for plants in the reserve garden that are intended to make good losses in the spring garden, or to plant out as summer bedders; such a surface covering, applied to summer bedding plants that are planted out in cold pits, will save an immensity of labour in the way of mat protection, for, as a rule, if the frost does not get hold of the roots, the tops of Violas and Pansies, and even *Calceolarias*, will stand many degrees of frost. Australian *Dracenas*, *Phormiums*, and any plants of a similar nature, as regards liability to injury from severe frost, are readily protected by a covering of fibre, leaf-soil, or cinder ashes applied to the base of the plants, and it may almost be desirable to mat up the tops of some of the finer plants, but this kind of protection should be given in such a manner that it can be quickly undone when there is a probability of mild weather setting in.

BEDDING PLANTS.—Old plants of *Pelargoniums* that were lifted from the beds will now have started into good growth, and should have all decayed portions of stems cut off and bad leaves removed, and if afforded plenty of light and a minimum temperature of 60°, they will produce good cuttings for spring propagation. As to root moisture, till the turn of the year this should be rather sparingly applied, more particularly in regard to the tricolor section, which are somewhat impatient of too much water at the root at this dull season of the year. Autumn-struck plants will need little or no watering for the next month or so, and to prevent mildew frequently go over them to remove all decaying leaves; give air freely when the weather is favourable, and if it can be accompanied with a little fire-heat, damp will be the more effectually expelled. The tender kinds, such as *Alternantheras* and *Coleus*, are no trouble to winter where firing is plentiful, but otherwise it is risky work, and those who cannot command a temperature of 65° or 70° had best exclude them altogether. Keep them well up to light and fumigate the moment there is the slightest trace of fly or thrips. *Alternantheras* and *Iresines* are very liable to attacks of these insects, and if the plants are anyways weakly, the more quickly do these

pests increase. Finally, let all the kinds of plants be arranged as neatly as if they were intended for conservatory decoration, and this apparently small matter will not only be productive of pleasure, but serve to the better wintering of them, as they are sure to get more attention than they would if stood about anywhere and anyhow. Have plenty of extra covering at hand in readiness for very severe weather, such as Bracken, straw, or litter, to cover up cold frames that contain *Calceolarias*, *Echeverias*, and the like, such covering to be left on continuously so long as the frosts last, and not to be removed for at least a couple of days after a thaw has taken place.

GENERAL WORK.—Finish up leaf raking and stacking, sweep and roll walks, and where Moss-grown scrape it off, or else prick up the gravel with a fork, sprinkle over a little fresh gravel, and roll down hard; level turf, and fresh turf bare spots under trees; also dig out old tree stumps, and trench up ground for new trees that are to be planted; choice shrubs and trees should be top-dressed as frequently as circumstances admit of. Young Conifers—all sorts—and Hollies are much benefited by surface dressings of suitable material; for the latter we use old Vine border soil, and for Conifers well-decayed manure and light sandy loam. For the most part the trees that we have to top-dress are on turf; this, therefore, has to be rolled back, the surface soil lightly loosened with a fork, and the dressing then applied. The turf is then rolled back at once, but not beaten down, only levelled, and thus the trees get the full benefit of all the rain that falls. The clipping of hedges and trimming into form of evergreen shrubs, clearing out of drains and haw-haws, as also the wheeling of soil and manure, are all of them suitable operations for frosty weather when little else can be done out of doors.

INDOOR.

LAPAGERIAS.—These are amongst the best climbing plants that can be used for the roof of a conservatory or greenhouse, not growing so vigorously as to much injure whatever other things are grown under them; but to have them continue in a strong, healthy state they should be planted out where the roots and the sucker-like stems they make can have some room to spread; yet it is not advisable to turn the plants out of pots until they have attained a moderate size, otherwise from their slow growth and the moist condition the roots require keeping in the soil gets sour before they take possession of it. For similar reasons it is not advisable even where good-sized examples are to be planted out to make the bed over large to begin with; in place of this it is better to follow the course adopted with a Vine border by adding to it as the roots extend. The best time we have found for planting out or in any way disturbing the roots of *Lapagerias* is about the present, when in most cases the flowering will be nearly over, for although there will not be much visible signs of growth for some time the young underground shoots produced from buds formed below the surface will soon begin to run, and any disturbance of the roots that is to take place ought to be carried out at once. A thorough cleaning should be given to all *Lapagerias* now when the shoots and leaves are in a hard, mature condition, as they will be better able to bear any dressing it may be necessary to apply with a view to free them from insects.

FRUIT.

HARDY FRUITS.—Get all pruning and nailing pushed forward during the prevalence of mild weather, as, independently of the fact that the men can do more work, the ground will be clear of refuse and ready for the reception of manure when weather suitable for wheeling sets in. If not already done, now is a good time to unnaill all the Cherries preparatory to pruning and washing with a strong solution of Gishurst compound or any other insecticide most in favour. When dry tie the shoots together in small bundles, secure

them to stakes, and wash the walls—if old and full of nail holes, with strong brine, lime water, or the composition recommended in a recent paper upon hardy fruits. These precautions this season are extremely needful, otherwise the myriads of black and brown fly which, owing to the low vitality of the trees, made such persistent attacks upon the enfeebled growths, will again appear in increasing numbers. Where labour is equal to the demand the same treatment applies to Plums, Apricots, and in some cases to Pears, but where the latter are quite free from scale they may be nailed in without delay. When pruning old trees it is a good plan to thin out the spurs and to scrape the Moss and Lichens off the branches for the twofold purpose of letting in warmth and air to the fullest extent and increasing the size and quality of the fruit. Trees on the Quince stock soon become one mass of spurs, and unless annual attention is paid to this operation, the fruit on many of the kinds becomes small and gritty; further, the root run being limited, mulching with good rotten manure is an important factor in the production of fine fruit; but as this annual dressing would soon raise the borders inconveniently high, the difficulty may be got over by casting the whole mulching over the border to be forked in for vegetable crops and by replacing it with fresh from the frame ground. The best time to do this is early in autumn, and if within reach, the remains of an old Melon bed, soil included, will be found a suitable material for the purpose. Notwithstanding the fact that Peaches and Nectarines are holding their leaves a long time, the growths are clean and kind, and the blossom buds are fairly prominent. If it is the practice to unnaill the trees every winter, the sooner it is done the better, as nothing more in the way of ripening must be expected from the elements, and removal from the walls does not render the young growths more liable to be injured by severe frost. Get Raspberries staked and tied ready for mulching, but defer cutting off the tops until the buds begin to swell in the spring. Untie Figs, rub off the half-swelled fruit, and tie the shoots together in bundles. Have protecting material ready, but do not apply it during the continuance of mild weather.

ORCHIDS.

MEXICAN HOUSE.—One of the most esteemed, and consequently most valuable, of Cattleyas is *C. Mendeli*. Of this there have been some large importations recently. One large specimen was purchased for fifty guineas at Stevens' rooms just as it was received from abroad, and the bulbs very much shrivelled; this may not always be a fault, for we have often found when the bulbs were shrunk that they started from the base quite as strongly as those that were more plump, and also made a stronger growth. All these imported Cattleyas should be potted in clean potsherds and charcoal only. All dead and decaying matter should be removed, the stems and bulbs well washed with soapy water, and the plants to be laid out to dry before potting them. *Vanda tricolor* in its many varieties and others of this type will now be getting into the resting stage, even although they may be flowering. The varieties of *V. tricolor* are very numerous, and as they flower more freely than *V. suavis* at this season of the year, they are more valuable on that account, for autumn bloom does not seem to prevent their flowering freely again in April and May. The *Vandas* do not seem to be so liable to be attacked by insect pests as some other Orchids; and nearly all the attention required by them is to wash the leaves with a sponge and weak soft-soapy water. It would depend something upon the stage of growth the plants are in whether they would require much water; if the roots are pushing vigorously, they must be kept rather moist; but if from the appearance of the points of the roots they do not seem to be growing, then but little water will be required. Just a word to those who have *Dendrobiums* going through their season of rest, that is *D. Wardianum*, *crassinode*, *nobile*, *Falconeri*, *moniliforme*, *crepidatum*, *Cambridgea-*

num, &c. It is best, of course, to have them in flower at different times, and for this purpose they should be brought into this house. In our experience we have found that by removing them from their cool quarters to a high temperature they are apt to be injured; they receive such a check, that the flowers will drop off. This does not happen if they are gradually inured to the heat and also to the moisture. A gradual change to heat and also to moisture at the roots will prevent much disappointment.

COOL HOUSE.—Where the collection is a miscellaneous one, comprising *Masdevallias* and Orchids that do not like so low a temperature as *Odontoglossums* of the *O. crispum* type, it may be well not to let the temperature fall much below 50° if it can be avoided; the ordinary cool house temperature of about 45°, falling to 40° in cold weather, is rather too low for some species of Orchids usually relegated to the cool house. Some species, as previously advised, may be removed to the Cattleya house. The very handsome *Dendrobiums*, *D. infundibulum* and *D. Jamesianum*, succeed best in the cool house, but we fancy they do not like the temperature to fall so low as the cool *Odontoglossums*; they also like to be near the glass, and to have the lightest part of the house. It may be that the difference of 5° exists between the temperature at the extreme ends of the house, or even more; in that case the Orchids that like the most heat may have the warmest end. A house well exposed to the sun is the best for the *Dendrobiums*, and one behind a north wall is the worst. These *Dendrobiums* are both natives of Moulmein; and although *D. formosum* is a native of the same country, and is so nearly related to them, it does best in the warmest house. The Japanese *D. japonicum* also succeeds well in the cool house. Then there is also the Australian species, *D. Johannis*, which also succeeds well in this house; being very distinct and sweet, it is worthy of a place. The old *D. speciosum* is not the least desirable of the species that succeeds in a cool temperature. Unless under exceptional circumstances, it may be as well to do no repotting. From now until January plants almost without exception do not like to be interfered with at the roots. Preparations may be made to get ready for the work when the time arrives. Nearly the whole of the cool Orchids succeed best in peat, Sphagnum, and clean potsherds mixed with a little charcoal. With few exceptions the *Odontoglossums* and *Masdevallias* do best in pots, draining them, so that there is no danger of the compost becoming sour. It does not need that much water should be sprinkled on the paths and borders at this season; a moderate degree of moisture is preferable to the atmosphere being always at saturation point.

PROPAGATING.

STOCKS FOR GRAFTING.—During the winter attention must be paid to the preparation of stocks of all kinds for grafting or budding next season, such as trimming off all superfluous branches, and where necessary replanting the stocks. If it is intended to graft under glass, which is the practice generally followed in the case of choice or delicate subjects, the stocks should be potted in as small pots as possible, and, if hardy, plunged out of doors till wanted. In selecting stocks of any kind choose them with clean, healthy growth in preference to such as are stunted, and, as the chances of success are greatest when both stock and scion are nearly related to each other, the object must be to choose those in which that relationship most nearly exists. Thus, in the case of the Conifers, for the true *Thuja selecta* as a stock the North American *T. occidentalis* and *Biota orientalis* for the *Biotas*. Among these latter it is absolutely necessary to graft one of the forms of the Golden Arbor-vite, viz., *sempervirens*, as it roots only with great difficulty. *Picea pectinata* is used as a stock for the Silver Firs, the Norway Spruce for the needle-leaved section of the *Abies*, and *Abies canadensis* for the *Tsuga* group. In selecting stocks for the various species of *Pinus* the selection must always be made of

one bearing the same number of leaves in a sheath as the scion; thus graft two-leaved on two-leaved, three on three, and so on. The common Yew does well as a stock for all the kinds of *Taxus*, *Podocarpus*, and *Cephalotaxus*, and seedlings of *Cupressus Lawsoniana* for its many varieties, and also for *Cupressus nutkaensis*. For the *Retinosporas*, obtusa and *pisifera* from seeds are used as stocks.

YOUNG VIGOROUS PLANTS with stems varying from the size of a straw to that of a pencil will be found the most useful for the whole of the above, and when potted they may be shortened somewhat where necessary, as at the time of grafting the heads must not be cut; that must be left until a union has taken place. The common *Euonymus europæus* does well as a stock for all the deciduous species, and on it also the evergreen kinds succeed, but then they are liable to lose a few leaves during the winter. Most of the slight-growing kinds of *Ivies* are grafted on the Irish, but before potting them up remove all underground buds, or suckers will be always troublesome. The *Osmanthus* not only grows well and freely on the Privet, but retains its leaves as well as on its own roots. This latter stock is also used for all the various species of *Ligustrum*, and with it the *Lilacs* readily unite, but do not live so long as when grafted on the common *Lilac*, which is easily raised from seed for that purpose.

MANY CYTISUSES do well on the common *Laburnum*; among others the beautiful pendulous greenhouse species, *Cytisus filipes*, which, grafted as a standard some 2 feet or so high, has a very pleasing effect. Seedlings of *Rhododendron ponticum* are principally used as stocks for the various members of that genus, being in some places grown in very large numbers for that purpose. The single red is the stock employed for the numerous varieties of *Camellia*, and it may be raised either from seeds or cuttings, the latter being principally the method adopted, as seed is seldom readily obtainable. The cuttings are made of the half-ripened wood about 6 inches in length, and succeed best when taken off just at the junction of the new with the old growth. Remove the leaves to the depth of 2 inches, insert the cuttings in well-drained pots of sandy soil, and place them in a close frame till callused, when a little bottom-heat will hasten the formation of roots, or a bed may be prepared in the frame, the cuttings inserted thickly therein, and allowed to remain till rooted. Of course, this latter method takes a longer time, as rooting does not commence till the following spring. The above include but a few of the plants for which grafting is employed; for instance, the greater number of our fruits are propagated in that way, but as they are principally grafted in the open air, the stocks, as in the case of *Roses* for budding, do not require potting.

WORK DONE IN WEEK ENDING DEC. 9, 1884.

DECEMBER 3.

THOUGH there were occasional showers, we managed to get soil mixed up for planting the back wall of a newinery with Peaches. We do not expect to keep the Peaches in a good bearing state more than a couple or three years at most, as by that time the Vines will shade them, but the trees will then move well enough, and be useful to replace worse trees that may then need renewal on the open walls, and meantime the fruit we hope to get from this wall will enable us to partially renew the trees in a Peach house that ought to have been done a year or two ago, but it could not be spared without causing a break in the supply of fruit, and that was an alternative not to be entertained. The Peach border forms the pathway of the house, there being a wooden trellis as flooring. The varieties of Peaches are Noblesse, Nectarine Peach, Sea Eagle, and Alexander, and Nectarines Lord Napier and Pit-maston Orange. Trenching in kitchen garden, turf levelling in Rose garden, pruning and nailing Plums; finished pruning and nailing Pears. This damp weather Grapes need almost daily looking over to remove decayed berries. Those in Grape room we examine most days, and for about an

hour at midday the ventilators and door are thrown wide open; there being just a little warmth in the pipes at the same time, the clearance of damp is effectual. I need hardly say that the heat is turned off as soon as (often before) the ventilators are closed, and in dry weather heat is never turned on at all. Potted more Seakale and placed in Mushroom shed to force. Laid Ashleaf Potatoes on leaf soil in boxes, and placed them in Peach house to sprout prior to planting out in frames. Lifted Autumn Giant Cauliflowers that were ready and not yet required for use, and heeled in close together where protection can be quickly applied should it be needed; the ground they have occupied is being prepared by deep digging and manuring for the second sowing of Peas and the earliest outdoor sowings of Radish and Lettuce.

DECEMBER 4.

A strong gale and heavy showers prevailing throughout the day, outdoor work has been all but *nil*, but we have always a sufficiency of indoor jobs for such weather, some of which would probably rarely receive attention at all were it always fine. Tool sheds have been thoroughly cleared out and the tools overhauled, old implements being thrown away and new ones brought out. Fruit and store rooms were also swept out and otherwise put straight; mats tied, some labels made, also boxes for bedding plants and the old ones repaired. Cut down another batch of *Chrysanthemums* and put in cuttings. Tied up Tree Carnations. Picked over and re-arranged flowering *Pelargoniums* that had got to look a little disorderly, owing to the demands on them for furnishing vases in the mansion. I think that double zonal *Pelargoniums* are not half sufficiently valued as they deserve to be as winter decorative plants, for they flower the winter through and need but little artificial heat—50° to 55° is ample—and in summer they give really no trouble, as they do best grown in the open air, and if plunged in ashes, watering is not a serious item of labour. Cuttings put in at once will make grand plants for next winter. Tying Figs to trellis. Turned over fermenting material in earlyinery, and filled another shelf with Strawberry plants. The flowers are just showing, and the plants will therefore be kept as close up to the glass as possible, and the temperature at about 60°. Vicomtesse Héricart de Thury will set its fruit freely in a temperature of 75°, but it would be indiscreet to give the plants such a heat now whilst daylight and consequently forcing conditions generally are at the minimum point.

DECEMBER 5.

A fine drying day. Rolled all walks; turfing in Rose garden; raked up and carted away more leaves. Our practice is to clear them out of all shrubby clumps; then we have no fear of being constantly vexed by untidiness through pheasants and other birds scratching them out, or by wind sending them just where they are not wanted, and by way of compensation to the shrubs they get when needed a dressing of decayed leaves and a sprinkling of fresh soil on top of that material, which not only makes the clumps look neater, but the roots lay hold of the dressing at once. Nailing Plums, and began to prune Currants and Gooseberries; tying Figs; picked all loose foliage off late Muscat Vines. The Grapes seem to be shrivelling slightly, that we shall risk giving the border another supply of water, and thereby hope to check any further shrivelling; I ought perhaps to add that the border is entirely inside. More heat and ventilation will be given for a few days after watering, to dry up as much as may be the atmospheric moisture, and in addition to this the border will be thickly covered with dry straw. Watered Pines. This has now to be done with great circumspection. None is given to plants that, having completed their growth, are required and expected to show for fruit between January 1 and the end of that month; fruiters are kept moistened through, and manure water is always applied. We never discontinue watering till the fruit has nearly completed colouring, and that no injury accrues from the practice is a certainty, which is more

than can be said for the practice of withholding of water the moment there is a trace of ripening, as that generally ends in badly developed pips, and, I think, of juiciness of fruit also. Suckers require very little water indeed now, but successions in good growth ought never to be allowed to get quite dry, or results may be premature fruiting as soon as they get a full supply of water or an increase of bottom heat. Gave *Camellias* another good washing with the garden hose; the flowers are now expanding fast, and this watering and washing will probably serve them till flowering is over.

DECEMBER 6.

Our usual weekly round of cleaning up was barely ended ere there came a return of rain and wind storms, which caused such a shower of sticks and leaves, that could we have foreseen, our outside work at any rate would have been of a more lasting description; it was all in vain to-day, and therefore is not worthy of being alluded to. Indoor duties proved more satisfactory; the whole of the houses had their modicum of attention. Plants had bad leaves taken off, and turned about and shifted to make them look their best. Floors, doors, ledges, and sills on which plants stand were well scrubbed down. Strawberries on bed of leaves in pit were lifted to prevent them rooting through at the bottom into the leaves. Pine beds were cleared of fungus and the walls and pipes of cobwebs. Bedding plants in vineries were freed from dead leaves and carefully watered, and the decaying leaves of *Lady Downes* and *Alicante* were picked off and the straw mulching of borders put straight. Relays of forcing plants were introduced into warmth and a few others potted. Cut down Maiden-hair Ferns that having been used for furnishing had got shabby, and, worse than that, part of them were badly infested with a soft brown scale. These will be put in quarantine till every trace of the pest has vanished, the first step to this end being the cutting down, next the clearing of the crowns by scraping away the soil with a sharp-pointed stick, and next the constant out-look and immediate destruction of any fresh appearance of the enemy.

DECEMBER 8.

Fine; therefore after doing certain cleaning up that the wind of the last two days had rendered necessary, trenching of Pear and Rose borders was proceeded with, also some alterations that entailed the moving and transplanting of *Rhododendrons*, grubbing up of brush-wood and turning and partially remaking of walk. The cutting of turf and carting of gravel also formed a part of to-day's doings. Finished tying Figs and top-dressed border with good loam, a bushel or two of wood ashes, and half-inch bones. Turned over manure in earlyinery; the moisture from it is now but little, and consequently the Vines are well syringed with tepid water at 2 p.m.; the buds are getting very prominent, and a rise in temperature will now be made—the lowest at night being 50°, the highest by day (without sun) 60°. Prepared early Muscatinery for forcing by giving the border, which is inside, a soaking with tepid water. The Vines have been let down from the trellis and are swung horizontally. As there is no space for a bed of leaves and litter in this house syringing will begin at once, but in cold, frosty weather it will be discontinued—at least so far as the Vines are concerned. Floors and walls will be damped down as usual. Early Peach house is now kept closed except in sunshine, and syringing is done at mid-day. Artificial heat will not for the present be applied, unless the external temperature falls below the freezing point.

DECEMBER 9.

Another rainy day, and the work has been much the same as that of other recent wet days, our outdoor hands being employed washing pots, making labels, cutting pegs, and making shallow boxes for bedding plants. House work done was pruning late Peaches, lime-washing walls, washing the pots of forcing bulbs before placing them in heat, tying up Tomatoes and *Euphorbia jacquiniæ-flora* to Melon trellis, staking *Poinsettias* to keep

them upright that the bracts may not grow one-sided. Washed with a sponge the foliage and stems of Gardenias. Scale is troublesome, an insect that seems to be even more tenacious of life than mealy bug, for though we have settled the latter with paraffin, scale still survives.

HANTS.

SOCIETIES.

ROYAL HORTICULTURAL.

DECEMBER 9.

THIS was the last meeting of the committees for the present year. The exhibits were not numerous, but several first-class certificates were awarded as follows:—

ODONTOGLOSSUM ANDERSONIANUM FLAVO-LUM.—A variety at once distinguished from the ordinary form of *Andersonianum* by the ground colour of the flower being more yellow, otherwise there is no difference. It is a beautiful variety, particularly as represented by the plant shown, which bore a long and branched spike gracefully arched. This was exhibited by Mr. Ballantine, from Baron Schroeder's garden, at The Dell, Egham.

CATLEYA BULBOSA GRANDIFLORA.—A superb variety of an old and well-known Orchid. It is dwarf in growth, having short, oval-shaped bulbs and thick, short leaves. The flowers of the present variety measure about 3 inches across, the sepals all being broad enough to form a flower of symmetrical outline. The colour of the sepals is of the deepest rose-lilac, while the lip is several shades deeper. It is by far the most beautiful variety that has been exhibited, being shown on this occasion by Baron Schroeder and Mr. H. James, Castle Nursery, Lower Norwood.

CYPRIPEDIUM INSIGNE VIOLACEUM PUNCTATUM.—This is probably the finest of the various forms of this Lady's Slipper, and is apparently synonymous with that named *Chantini*. The distinctive character, and one which renders it so beautiful, is the dorsal sepal being nearly half white and spotted with violet-purple. A fine specimen bearing fifteen expanded blossoms was shown by Mr. Heims, gardener to Mr. Philbrick, Q.C., Oldfield, Bickley.

CALANTHE SANDHURSTIANA.—A most lovely variety, similar to *C. Veitchi*, but having the flowers several shades deeper in colour and much richer than the best forms of that variety. A small plant bearing a few-flowered spike was exhibited by Sir Trevor Lawrence from his garden at Burford Lodge, Dorking, where it has long been grown. A brilliant future may be predicted for this new Orchid.

RHODODENDRON CONQUEROR.—Another member of the beautiful race of hybrid varieties which Messrs. Veitch, of Chelsea, have so successfully raised. The present variety is remarkable for its massive trusses of large and finely shaped flowers of a beautiful orange-scarlet.

CHRYSANTHEMUM FABIAS DE MADERANNEZ.—One of the Anemone-flowered section and certainly among the finest. The flowers are large, having broad centres of quilled florets, the outer florets being long, narrow, and very numerous. As shown by Messrs. Laing on this occasion it was of a pale pink, but earlier it is of a deeper shade.

CARNATION GRAND MONARCH.—A new perpetual-flowering sort, having large, full flowers of a deep velvety crimson, just the colour of the deepest forms of the old Clove; a valuable addition to this beautiful class of winter-flowering plants. Shown by Mr. Turner, Royal Nurseries, Slough.

CHRYSANTHEMUM VAL D'OR.—A pompon variety, and one of the smallest flowered sorts in cultivation. The flowers form little dense heads, perfectly globular, and of clear yellow. Being a free flowerer and of a good habit of growth, it is extremely attractive. Shown by Messrs. Laing, Stanstead Park Nurseries, Swanley.

Some interesting Orchids were exhibited besides those certificated. Sir Trevor Lawrence sent a flowering specimen of the rare *Houlletia odoratissima*, which has spikes of curiously shaped flowers somewhat resembling those of *Mormodes*. Their colour is a deep vinous purple, and the perfume is pleasant. Accompanying this from the same collection were two new *Calanthes*, presumably hybrids, named *tincta delicata* and *bella*. The former has its flowers faintly tinged with rose, those of the latter being ivory-white with a carmine centre. Mr. Lee sent from his collection a small plant of *Maedevallia racemosa* Crossi with one expanded flower and one bud, which apparently was not sufficient material for the committee. There was also a small plant of the pretty new *Odontoglossum adpersum*, best described as a yellow variety of *O. Rossi majus*, and a finely flowered plant of *Dendrobium Leechianum*, a beautiful hybrid similar to the older and better-known *D. Ainsworthi*. Mr. G. F. Wilson sent from Heatherbank, Weybridge, a remarkable spike of *Odontoglossum crispum*, bearing no fewer than 45 blossoms, a fine example of good culture, and accordingly the committee voted a cultural commendation to Mr. Wilson's gardener. Mr. Ingram sent a beautiful new *Odontoglossum*, but unfortunately too late to be submitted to the committee. It reminded one at once of *O. Coradinei*, though it is abundantly distinct from that species, the flowers being larger, brighter coloured, and altogether finer. The ground colour is a bright clear yellow, on which are heavy blotches of chestnut-brown. It should have a distinctive name. Mr. Ingram likewise showed a good variety of *O. gloriosum*, sweetly scented and heavily spotted.

Other plants of interest shown included a new Maiden-hair Fern from Messrs. Veitch. It is named *Adiantum Collisi*. It is a most elegant and beautiful Fern, with small pinnae on the broad spreading fronds. Messrs. Veitch also showed *Rhododendron Queen of Roses*, a new seedling with large trusses of rosy pink flowers. It is a strong grower and, like the rest of its race, remarkably floriferous.

A cultural commendation was accorded to Mr. W. Allan, Gunton Park, Norwich, for a fine basket of flowering plants, together with cut flowers of the beautiful double white Violet called *Comte de Brazza's Neapolitan White*. Mr. Allan certainly knows how to cultivate this Violet better than anyone we know, and his exhibits on this occasion well merited the commendation. A variegated Chinese *Primula* was shown by Mr. Wodham, which may prove a useful ornamental plant. Mr. B. S. Williams sent specimens of one of his new *Poinsettias*; it was named *ignescens*, the colour of the bracts being a bright carmine instead of the usual scarlet hue. Messrs. Veitch showed a new variety named *Maid of Athens*; it is white, in the way of *Meg Merrilies*, and remarkable for its lateness.

CARNATIONS of the perpetual-flowering class were shown by Messrs. Hooper, Covent Garden, and Mr. Turner, Slough. These were particularly attractive, and both collections included new kinds. Among Messrs. Hooper's sorts was a lovely white called *Mdlle. Carle*, in the way of the summer-flowering *W. P. Milner*. Other fine sorts were *Irma*, *Jean Sisley*, *Alegatière*, *Zouave*, *Triomphe de Lyon*, *Chevalier*, the yellow ground sort certificated at the last meeting, and *C. A. Hooper*, also a yellow ground flower with crimson edges, even finer than *Chevalier*, and one we thought the finest of the collection. The best of Mr. Turner's sorts were named *Emerald*, *Garnet*, *Madeline*, *Curiosity*, and *Black Diamond*.

CHRYSANTHEMUMS were shown by Messrs. Cannell and Messrs. Laing. The former had chiefly single sorts, some of which are pretty and elegant, particularly the following: *Canariense*, sulphur; *Miss Fortescue*, blush pink; *Peter Henderson*, yellow; *Firefly*, small, Indian red; *Brunette*, brownish red; *Magenta King*; *America*, with long, pink, shaggy florets; and *Henry Irving*, pink. Besides these was a beautiful Anemone-flowered sort named *Virginal*, in the way of *Marie Stuart*, but whiter. Messrs. Laing's new

sorts included *Dormillion* (Japanese), purplish magenta; *President Arthur*, large, single, tawny yellow; *America* (Japanese), single, large and white; *M. Urgil* (Japanese), deep orange-red; *Peter Henderson*, purplish rose, single; *M. Auguste Tegier*, like *Lord Beaconsfield*, but of a browner tint; and *Mad. Louisa de Reydellet*, purplish rose.

ZONAL PELARGONIUMS were, as usual at these winter meetings, shown admirably by Messrs. Cannell. On this occasion their collection included the following fine sorts grown to perfection; *Lady Reed*, salmon; *Ajax*, scarlet; *E. George*, magenta-rose; *Alloides*, crimson-scarlet; *Advance*, scarlet; *Favourite*, dull salmon-pink; *F. Kauffer*, amaranth; *Lady Chesterfield*, salmon-pink; *Mrs. Robertson*, deep rose; *Scarlet Cloth*, fiery scarlet; *Mrs. Bowen*, delicate blush; *Ida Walter*, deep crimson; *Queen of the Belgians*, the finest of all single whites; and *Le Cygne*, double white. Messrs. Cannell also showed a large group of pot plants of Chinese *Primulas* in beautiful varieties, such as *Swanley Giant*, *Invicta*, *Swanley Blue*, *Princess of Wales*, *Queen of Whites*, *Princess Beatrice*, *Swanley Red*, and *Christmas Cheer*.

A glaucous variety of *Abies Douglasi* was shown by Messrs. W. Paul & Son, Waltham Cross. It is a handsome variety, having the foliage of a bluish glaucous tint, which, in contrast with the typical kind, is all the more striking. Plants of *A. Douglasi* and the variety *glaucous* were shown for comparison.

A remarkable exhibit came from Mr. Bennett, of Shepperton. It consisted of three plants of the new Rose, *Her Majesty*, each having shoots 9 feet in height and 2 inches in circumference. These extraordinary shoots are the result of six months' growth from grafts. Such plants as these are either adapted for cutting back to form standards or for pillar Roses.

Fruit and vegetables.—Some fine Pineapples were shown by Mr. Hudson from Mr. Atkinson's garden at Gunnersbury House, Acton. These consisted of two examples of the Lord Carington variety, handsome conical fruits, both weighty and of good shape, a pair of The Queen variety, and a Smooth Cayenne, a large fruit with no crown. A vote of thanks was accorded. Mr. Roberts showed from Gunnersbury Park some pot plants of *Negro Largo* Fig thickly set with fruit; also gathered fruit of the same variety, which is undoubtedly the finest for pot culture. A cultural commendation was accorded to Mr. Roberts. Mr. Gilbert, of Burghley, showed an oval-shaped green-fleshed Melon called *Ganges*, which, however, was not of good quality. A fine dish of Round Nonsuch Apple came from Mr. Turner, Slough, and another exhibitor showed fine fruits of *Peck's Pleasant*, an Apple said to retain its foliage longer than any other. Mr. G. F. Wilson showed several ripe fruits of *Diospyros Kaki*, an uncommon Japanese fruit, very similar in size, shape, and colour to a smooth Tomato; the flesh is similar to that of a Plum in texture, and agreeable to the taste. Mr. Wilson is particularly successful in growing and fruiting this tree in his orchard house at Heatherbank, Weybridge, and a cultural commendation was accorded to him. Messrs. Veitch showed a new Celery named *White Plume*, the peculiar quality of which is that it is naturally bleached, and therefore requires no earthing up to whiten it. The samples shown were excellent, being perfectly blanched and of first-rate quality. It seems to be a naturally etiolated sort, towards the centre some of the leaves being green. Mr. Barron showed from the society's garden at Chiswick four sorts of Celery, of which *Clayworth's* was considered by the committee to be the best.

The Floral Committee.—A joint meeting of the two sections of the floral committee of the Royal Horticultural Society (presided over by Mr. Shirley Hibberd and Mr. J. O'Brien) was held on Tuesday last, when the following resolution was unanimously adopted: "That the council be respectfully informed that this committee has

endeavoured loyally to conform to regulations adopted by the council for the present year; the chief feature of which is the division of the committee into two sections. The committee had no opportunity of expressing an opinion in advance of the change, but now that a year has elapsed, feels bound to say that the change has proved unfavourable to the dispatch of business. The committee in its divided state cannot command the variety of knowledge and fulness of judgment that are requisite to its deliberations, and the several members, being restricted in their critical considerations of subjects submitted, feel less interest than formerly in the business that calls them together. Moreover, the restriction limits their compensation for the time and attention their work demands. Under former arrangements, the consideration of every subject by the whole body was of advantage to all, irrespective of individual opinions and the votes finally taken."

Scientific committee.—Sir J. D. Hooker in the chair.

Hoya and Sparrmannia roots clubbing.—Mr. McLachlan reported upon these roots, sent by Mr. Plowright to the last meeting. They appear to be due to *Rhizoglyphus Robini* (?) (gen. of Tyroglyphidae). Mr. Albert Michael reports that it has appeared this year in numerous places and is doing much damage to bulbs. The individuals are considerably smaller than most, but this is not unusual in *Acari*. He suggests that they are not so well nourished as by bulbs. Mr. McLachlan adds that he could find nothing in the hard swellings, but only in those that were softened by incipient decomposition. He suggested that inundation at intervals, if practicable, might do good, or saturation of the soil with kerosene or bisulphide of carbon, as used for the *Phylloxera*, might be tried at intervals, so as to destroy the eggs as well as the developed mites. He further remarked on the Tyroglyphidae, that they have been supposed by some to be parasitic on the *Phylloxera*, but that this idea is not entertained by Mr. Michael. They usually attack the Lily bulbs between the scales, apparently giving rise to a resinous exudation not uncommon on bulbs. Mr. Smith reported on the same roots that he had discovered nematoid worms only in the green parts, but not in the corroded.

Floral monstrosities.—Dr. M. T. Masters exhibited drawings of *Vicia americana* and *Cypripedium Sedeni*. In the former the calyx had stipular processes developed between the lobes; the petals were simple or variously lobed, five to seven in number, with little or no distinction between the standard, wings, and keel. The stamens were variable in number, some consisting of simple threads devoid of anthers, others bearing at the top two or three petal-like lobes; when three in number the central one bore an abortive anther. The pistil was stalked with more or less foliaceous carpels without ovules. The *Cypripedium* had the three sepals distinct; the two lateral petals were arranged diagonally, unequal in size. A lip-like petal was slightly calcarate at the tip. The column had the two lateral stamens perfect, but no staminode. Each stamen bore a petaloid wing.

Diospyros Kaki.—Mr. Wilson exhibited five scarlet fruits of this Japanese tree of good flavour.

Passiflora foetida.—Mr. Lynch showed fruits of this species, remarkable for the pectinately divided bracts covered with glandular hairs and surrounding the globular yellow fruit.

Malva umbellifera and Abutilon igneum.—Mr. Lynch showed specimens of these fine-flowering plants from the Cambridge Botanic Gardens.

Evergreen Plane.—Sir J. D. Hooker referred to a species described by Pliny as growing in Crete, and of which he had just received foliage and unripe fruit. It closely resembled *Platanus orientalis*.

Drawing of Egyptian mummy with wreaths in situ.—He also exhibited a drawing sent by Dr. Schweinfurth, showing the Lotus leaves and wreaths in situ on the Egyptian mummies. The

wreaths and plants contained in them were described in *Nature* and elsewhere.

Sclerotia in Potatoes.—Mr. Murray said he had repeated his experiment, and still failed entirely to corroborate Mr. Smith's and Mr. Wilson's observations as to the presence of a protoplasmic body within the shell of calcium oxalate. It was proposed that they should make a joint examination, and report upon the result at the next meeting.

Viola acuminata.—Mr. Ridley exhibited a germinating specimen in which a tuft of flowers was appearing in the place of the plumule, and observed that the Cotyledons were first of a pinkish hue, but became subsequently a bluish green, the colour not being due apparently to chlorophyll.

Grapes attacked by Oidium Balsami.—Mr. Barron sent specimens in which the peduncles were attacked by this fungus, which, however, did not appear to affect the fruit. It was described by Mr. Smith in the *Gardeners' Chronicle* for September 6, 1884.

Red spotted Potatoes.—A communication was read from Yorkshire to the effect that "a large crop, of fully 10 tons to the acre, was badly attacked by this disease. It was a first crop after breaking up a common where formerly Heather and Fern grew. The soil was light and sandy. The worst affected appeared to be from the earliest planted seed. A similar attack had occurred in Potatoes grown in old soil. The land was worked well and manured with a dressing of long manure, and about 6 cwt. per acre of a mixture comprising sulphate of potash, muriate of potash, dissolved bones, and sulphate of ammonia, this mixture having proved to be eminently suitable in sandy soil."

Information was also received from Kent, where the disease has occurred since 1879, when it attacked Early Rose, since which year it has appeared more or less annually. In 1882 "Myatt's Ashleaf was badly spotted, but it did not at all affect its growing qualities, for the produce from them was entirely free from it. This year the worst was Magnum Bonum, but several varieties are more or less attacked. The soil is a light sandy loam on a high and dry situation. Different manures appear to have no effect in either producing or reducing the spots."

Another writer near Clevedon "has discontinued growing Victoria on account of this particular disease, which is very bad in dry seasons. The soil is a sandy one more or less in every place where they were grown. Manure appears to have nothing to do with it." The coincidence of red-spotted tubers with a sandy soil, and the agreement that manure has nothing to do with it, is thus far noticeable. Further observations or experiences are desired, and communications are requested to be sent to Rev. G. Henslow, Drayton House, Ealing.

The Auricula and Carnation Societies.—A general meeting of the members of the southern sections of the National Auricula and Carnation and Picotee Societies was held in the Conservatory at South Kensington on Tuesday last, for the consideration of the report of the sub-committee appointed for the preparation of rules in connection with both societies, and the arrangement of the schedules for the ensuing year. Mr. Shirley Hibberd presided, and a protracted discussion ensued upon various matters connected with these societies and their secretaries. It was evident that the members were divided amongst themselves, and various protests were made against the proposed changes by Mr. Dodwell and others. Of the thirteen rules drawn up seven only were adopted with slight alterations, the remainder being set apart for the consideration of a sub-committee, as they referred specially to exhibitors.

English Arboricultural Society.—At the annual general meeting of this society, the secretary submitted the annual statement of accounts, which showed that the receipts amounted to £57 7s. 5d., and that after paying expenses there was a balance left on hand of £23 8s. The

chairman (Mr. Watt) delivered an address, in the course of which he said that some of the most important questions of the day were "Tree planting versus corn growing," "British Schools of Forestry," "Re-afforesting of Ireland," and "Colonial wood conserving." During this year they had inaugurated the first forestry exhibition ever held in Europe. Sir John Lubbock would shortly move in the House of Commons leave to inquire into the state of the woods and forests of this country. Dr. Lyons had already done so, and had also lectured upon forestry in Edinburgh, Chester, and other places. Essays had been written and read everywhere, and hardly a publisher's catalogue appeared without a reference to some book or work upon the subject. All this proved that the art with which they were connected was receiving attention. He added that a large proportion of land hitherto cultivated in more prosperous times would be better under woodlands, inasmuch as it would not only give a better return, but also improve the value of the adjoining lands in every respect. He was fortified in this statement by a paper read by Mr. Baty, at the Forestry Exhibition, in which he gave the result of twenty-eight years' management of the Netherby Woods, showing that the receipts from 2000 acres of woodlands amounted to £1 10s. 11d. per acre, and the expenditure 12s. 4d. Early in the present century the Earl of Cawdor planted on his Nairnshire property 800 acres of hilly land, the value of which was but nominal; and now that it had been cut and sold the wood realised the handsome sum of £16,000.

OBITUARY.

WE have to record with regret the death of Mr. DANIEL JUDD at Sheffield, Bedfordshire, aged 69. Mr. Judd stood in the foremost rank amongst gardeners of his day—a race of good men, few of whom unfortunately now exist. As gardener he has filled some of the best places in the country, including Althorp Park, where he made a new flower garden from designs furnished by Mr. Thomas. He was an occasional contributor to the different horticultural papers and to the Transactions of the Royal Horticultural Society, and was also the author, conjointly with the late Mr. W. P. Ayres, of a book on the Cucumber.

LATE NOTES.

THE list of deaths among gardening periodicals has been so long and sad of late, that it is cheering to hear rumours that one or more marriages are contemplated among the survivors.

Gardeners' Royal Benevolent Institution Augmentation Fund.—Mr. Owen Thomas, Chatsworth, Chesterfield, has sent us a third list of contributions to this fund amounting to £3 2s.

Dendrobium crassinode (B. D. K.).—The variety *Barbarianum* differs from the type in the sepals, being tipped with much deeper and richer colour, but this varies in intensity in individual plants.

Papaver nudicaule (Mrs. P.).—This plant may be obtained from seed from the principal seedsmen. Messrs. Barr, of King Street, Covent Garden, we believe, possess the large varieties of it. The *Romeya* may be also had from seed, but is not so common. For plants try some of the chief dealers in hardy plants. You will find the country seat to which you allude in the "Garden Annual."

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—S. Jackson.—1, *Sedum arborescens* variegatum; 2, *Platycodon alcinoides*; 3, *Farfugium grande*; 4, *Sedum arborescens*.—*Calanthe*.—Your flowers were crushed beyond recognition. Send some in a strong box, not in an envelope. The variety is *Calanthe vestita rubro-oculata*.—W. B.—*Brassica cinnamomea*.—J. B. (*Stralhan*).—*Miconia semicrenata*.

CATALOGUES RECEIVED.

Sutton's (Reading) Pocket Garden Calendar for 1885.
Corry, Soper, Fowler & Co.'s Trade List of Garden Requisites and Tobacco Preparations.
Toll & Co.'s (Hexham) Forest and Ornamental Trees and Shrubs, Hardy Plants, &c.
Ireland & Thomson's (Edinburgh) Forest and Ornamental Trees.
Hage & Schmidt's (Erfurt) Novelties in Flower Seeds.

No. 983. SATURDAY, Dec. 20, 1884. Vol. XXVI.

"This is an Art
Which does mend Nature: change it rather: but
THE ART ITSELF IS NATURE."—Shakespeare.

CHRISTMAS FLOWERS.

FLOWER growers for market produce about this time of year enormous quantities of white flowers. For church decoration alone large quantities are used, while for evening parties, and, in fact, for all kinds of floral decoration, the purest white flowers and Fern fronds form the bulk of all arrangements. Coloured flowers are by no means popular, and growers find it better to rely on well-known sorts than to go in for miscellaneous collections, such as are found in private gardens. Amongst the most noticeable at the present time may be mentioned Azaleas. Amongst these, the Old White, Fielder's White, and narcissiflora are forced early into flower every year; consequently they make their young growth and mature their flower-buds early, and therefore they are preferable to young plants that take much longer to unfold their blossoms. For very early forcing, large plants in comparatively small pots full of active roots are best, and in this respect the Azalea is an accommodating plant, but it must never be allowed to get dry, or it seldom recovers from the check. Abutilon Boule de Neige is one of the freest winter-blooming white flowers in cultivation; old plants of it trained up near the glass in houses in which there is a temperature of about 55° yield abundance of snow-white blossoms at almost any time of the year, or even all the year round. White Camellias, too, are greatly prized. They are usually gathered from trees planted out in rather low span-roofed houses, which admit of a large bed in the centre and a row of plants all round; they grow in a compost of turf and peat, or one composed entirely of the latter, and when kept constantly under glass, as they must be on the planted-out system, there is little difficulty in getting them into full bloom at Christmas. The safest plan with Camellias is to prepare them for forcing when making their growth in spring. Plants that flower early one year can have their young wood pushed on by artificial heat, and when the buds are nearly ready to burst into flower they may be kept back or forwarded at pleasure, but the attempt to force buds partially developed into bloom by means of strong fire heat too frequently ends in failure. Amongst coloured varieties the old C. Donckelaari is a great favourite, as it blooms very early naturally, and semi-double flowers are really more effective than the symmetrical double flowers that come in with the lengthening days of spring-tide. The stately white-spathed Arum Lilies are exceptionally well suited for church decoration, a purpose for which they are largely employed. They are mostly plants put out in summer into open-air beds; they are lifted in September and placed in gentle heat as soon as they are well rooted, a dry, warm atmosphere being necessary in winter to infuse into them the pure white colour for which they are distinguished. Eupatorium odoratissimum bears useful, feathery, white flowers, and requires but little artificial heat to get it into full bloom in mid-winter. Grown out of doors in summer and kept closely stopped in, it forms a

mass of flower-heads that open in a genial temperature of about 50°; the blossoms must be kept dry, or their purity soon becomes spoiled. Gardenia blooms at Christmas are indispensable, but they are not such profitable flowers to grow in winter as one might imagine; they require a good deal of fire heat in order to get them to open during the dark days, and under the most careful management a great number of the buds rot at the base and drop off just as they appear ready to expand. They do best planted out on mounds of peat, and when well rooted, mulched and copiously drenched with clear soot-water, that imparts to the foliage that dark glossy look that betokens good health. The Christmas Roses are much grown, especially the large white kinds; large clumps of them are lifted and forced in pots, or covered with cloches or hand-glasses where they grow, the latter plan being unquestionably the best for the plants, which do not like much root disturbance. Hyacinths of the white Roman variety are now very largely grown, yielding, as they do, their delightfully fragrant sprays of bloom with but little artificial heat, and thus doing away with the necessity for employing kinds that do not submit to early forcing so kindly as this useful variety does. Double white Primulas are still popular market flowers, being well suited for bouquets of all kinds; they are grown mostly in 5-inch or 6-inch pots in low span-roofed houses, having a bed in the centre and a border all round; a dry warm atmosphere of from 55° to 60° suits them well. Early-flowering Narcissi, such as the Paper-white, are grown in boxes for the sake of their delicately perfumed blossoms, that are in great request for vase decoration. Half-expanded Tea Roses are much used for button-hole bouquets, and for this purpose none are more popular than the white-flowered Niphetos. White Tulips, too, play an important part in most floral decorations, as do also Tree Carnations and Violets, the latter for their sweet scent. J. GROOM,

Gosport.

FLOWERS BY POST.

THE fact that the Royal Botanic Society has considered the subject of suitable boxes for transmitting flowers by post of sufficient importance for the deliberations of a special committee is an indication that some means have been taken to remedy what has long been a standing complaint among those who send and receive flowers through the post. That a suitable vehicle for transmitting flowers and fruit by post has been a desideratum we can ourselves testify, as we have daily instances of the rough usage to which fragile boxes are subjected at the merciless hands of the post-office stampers. In most cases the flower boxes sent to us consist of flimsy cardboard, which is totally incapable of resisting the stamping process if the stamps are stuck directly on the box; consequently the box arrives at its destination often in a flattened condition. Cardboard boxes having a lip at the end for the stamps generally arrive safe and sound. There are also some neat little oblong wooden boxes, but the top and sides of these often arrive piecemeal. The best of all we find to be stout tin. It is not only strong enough to resist the force of the most energetic stamper, but flowers always travel freshest and best in such boxes, and even if delayed keep fresh. We are pleased to see that the Royal Botanic Society's committee, over which Lord Annesley presided, have come to the

conclusion that a tin box is best. They have selected as the recipients of their award—a silver medal—a firm who manufacture tin boxes for the purpose, the dimensions of which are 15 by 9 by 6 inches, and sell them, as will be seen (see p. 530) at a cheap rate. There were, it appears, eight competitors in all who sent boxes of all sorts and sizes in wood, cardboard, and metal. We have not seen the silver medal box, but it is said to be provided with elastic straps for keeping in position damp Moss, in which the stalks of the flowers are inserted. This is a capital plan, and by adopting it, flowers may be kept as fresh as gathered in the boxes for a couple of days or longer. Hinged boxes are always preferable, as lids often get mislaid. As regards fastening the boxes, we find it a good plan to simply bore a couple of holes in the lid, put the string through from the under side, carry it round the box, and tie it securely. If our correspondents who send us flowers for naming or otherwise would adopt the strong tin box, we should be better able to determine their flower names or speak of their merit. Now that the Parcels Post affords such a ready and cheap mode of sending flowers and fruit by post, it is quite time that the senders studied the best plan of packing.

Amaryllis Comte de Germiny.—Such is the name of a new addition to the beautiful race of hybrid Amaryllises which Mr. B. S. Williams has originated, a race whose beauty as well as utility for affording winter bloom cannot be over-estimated. This new variety numbers the third of the race, the others being Mrs. Garfield and Mrs. W. Lee, both extremely lovely plants. This race has been obtained by intercrossing the old *A. reticulata*, the species having broad silvery midribs on the leaves, with the hybrids derived from *A. aulica*, Leopoldi, pardina, and others. The brilliant colours, the large flowers, and the free flowering tendency have been most successfully blended with *A. reticulata*, the peculiar beauty of which is the delicate rosy tint of the flowers and the evergreen foliage. This intercrossing has not only effected the blending of these peculiarities, but it has done more: it has imparted to the progeny not only a free flowering character, but made them perpetual flowering. The reason is this: the foliage of *A. reticulata* being persistent or evergreen, is continually feeding new bulbs, which as soon as large enough commence to flower; the consequence is that a potful of bulbs if undisturbed will produce flowers every month throughout the year, as in the case of the *Eucharis*. In the ordinary race of hybrid Amaryllises the foliage being deciduous, growth is arrested as soon as the current year's leaves have fallen. These perpetual flowering sorts are therefore a great gain and particularly for winter, when no other Amaryllises and very few other bulbous plants naturally flower. The Comte de Germiny variety is the deepest of the three kinds just named in colour, which is a deep rose-carmine exquisitely netted, as in the case of the others, all over the petals, which in addition have a medial band of white. The flowers in other respects are very similar to those of Mrs. Garfield, illustrated in *THE GARDEN* last year. There are some fine flowering specimens of this new sort in Mr. B. S. Williams' nursery at the present time, and, judging by the stock of plants all showing flower-spikes, there will be flowers of it throughout the winter. We noticed that Mr. Williams is directing attention to Amaryllises more than ever. He has just completed a fine span-roofed house of capacious dimensions specially for Amaryllis culture. It is now filled with hundreds of plants in preparation for the spring exhibition of flowering plants.

A Carnation wall and a good Rose.

One thing I am looking forward to is one of my walled banks, with large three-year-old plants of

Carnations hanging down as they do in Italy, and there are divers pretty things at the bottom, which will meet those from above. In full flower it should be worth seeing. *Mdme. Lambard Rose* is so good outside still, that when the next fine spray is out I will send it, to show how hardy and useful a winter Rose it is; of course its colour is paler now than under more sun-light.—E. H. W.

PLANTS IN FLOWER:

Rondeletia brevifolia.—This bright-flowering plant is certainly worth growing, if only for affording a supply of cut flowers in midwinter. Its flowers, which are borne in clusters as in other cultivated *Rondeletias*, are of a peculiar shade of reddish orange. It seems to be particularly free flowering, and continues in bloom a considerable time. It is now in flower in Mr. W. Bull's nursery at Chelsea.

Gladioli Ville de Versailles.—Some flowers of this lovely variety have been sent to us by Mr. Baylor Hartland, Temple Hill, Cork, who thinks highly of it. It is, indeed, one of the most beautiful greenhouse flowers one can grow for winter bloom. It is one of the *G. ramosus* section. The flowers have faintly tinged petals, and the lowermost three are heavily blotched with bright carmine. Perhaps Mr. Hartland will say how he treats it so as to get it to flower at the present time.

Flowers from Scarborough.—I send a few seasonable flowers on the chance of their interesting you, as being all out-of-doors and unprotected, save *Jasminum gracillimum*, *Luculia gratissima*, and Carnations *Mrs. Keen* (dark) and *Beauty of Boston* (rose). *Veronica Ville d'Hyères* is an extra hardy crimson variety. The Tea Roses are *Mdme. Lambard* and *Aline Sisley*, which, after 5° of frost, show their exceptional hardiness; also *Sweet Coltsfoot*.—EDWARD H. WOODALL.

* * A beautiful gathering of winter flowers, the long wreath of white Jasmine, the deliciously scented *Luculia* (a fine truss) and the Carnations proving particularly fine. *Mrs. Keen* Carnation is unquestionably a good deep crimson, while *Beauty of Boston* vies in beauty with the favourite *Mary Morris*, the flowers being quite as large and full, and of that clear pink colour so much admired. It does not appear to be so much known—at least about London. The Tea Roses indicate the mildness of the weather at Scarborough, while the *Veronica Ville d'Hyères* equals *imperialis* in colour, and being hardy is a great gain.—ED.

Vriesia brachystachya.—Among select kinds of Bromeliaceae plants suitable for general cultivation we should put this in the front rank. It is not only a most beautiful and showy plant, but it possesses qualities which render it very valuable as a decorative plant. Its inflexed tufts of leaves are so small and dwarf, that they do not take up much room. It may be grown in small pots or massed several together in pans. The flower-stems much overtop the foliage, being about a foot in height, surmounted by two rows of flowers spreading in a comb-like fashion on each side, making the spike about 3 inches across. The flowers, which are clear chrome yellow, protrude slightly from a calyx also of the same colour, while the bracts are brilliant crimson-scarlet, thus affording a striking contrast of colour. The flower lasts in good condition for several weeks in a stove, and certainly no other plant can vie with it in point of colour. It is now in great beauty in Mr. Bull's nursery at Chelsea.

Tillandsia Lindenii vera.—Each recurring December has revealed to us the extreme beauty of this plant. It is undoubtedly a queen amongst dwarf Bromeliads; no other possesses such a combination of elegant growth and charming colour. Its dense tufts of narrow leaves recurve gracefully on all sides, and from the centre are produced the flattened flower-spikes rising just above the foliage. The floral bracts are clear rose-pink, while the blossoms, which peep out in succession two or three at a time, are of the deepest violet-purple. The flowers continue to expand for several weeks in succession, and long after all have unfolded the bracts remain fresh and brightly coloured. It is so totally unlike any other stove plant flowering at this season, and so beautiful withal, that it is quite indispens-

able. Nowhere can it be seen in such perfection as in Mr. Bull's nursery, where in one of the stoves are hundreds of plants of it arranged in a mass, many of which are in flower.

Luculia gratissima.—The difficulty of increasing this lovely and deliciously scented shrub, now in the height of its flowering season, has been the chief reason why it is comparatively uncommon. Even the most expert propagators are often defeated in their attempts to increase it, and it is said that there is only one nursery—a Scotch one, we believe—where it is propagated successfully, that is, in sufficient quantities for trade purposes. In the face of this difficulty, Mr. B. S. Williams imported seed of it some time ago, and has fortunately been able to raise quantities of seedlings, many of which are now flowering in his nursery at Upper Holloway. These exhibit a more vigorous growth than plants from cuttings; and, moreover, there is a chance of some distinct varieties as regards colour cropping up, not that the delicate rose-pink of the original kind can be surpassed in loveliness. That greenhouse which does not contain this Nepalese shrub must be destitute of a deal of flower-beauty during the dull days of November and December.

New Poinsettias.—Since the advent of the double *Poinsettia* (*plenissima*) there has been no new addition to the varieties, except the white bracted form, until lately. Some new varieties, showing a variation of colour in the bracts from the original kind, have now been raised and acquired by Mr. B. S. Williams, in whose nursery they may now be seen flowering side by side. These differ in no respect from the type except in colour, which in *ignescens* is brilliant carmine-rose, in *brilliantissima* a vivid scarlet of a shade different from the common, while that named *mirabilis* has the upper bracts scarlet and the lower half scarlet and mottled with green. Seen in groups the colouring of all these is very fine, and in the case of *ignescens* the softness of tint is much more pleasing than that of the original kinds. Tastefully arranged with Ferns and other elegant foliage plants, these *Poinsettias*, together with the white bracted variety, are capable of producing beautiful effects, particularly when seen in rooms under artificial light.

QUESTIONS.

5291.—**Tuberoses**.—I should feel thankful if some of the readers of THE GARDEN would kindly favour me with information as to the best way to grow Tuberoses.—W. C.

5292.—**Poinsettia pulcherrima lutea**.—A friend insists that there is in cultivation a yellow-bracted variety of *Poinsettia* thus named. Is that so? I had supposed that there was no other form with light coloured bracts except the creamy white *albida*.—A. M.

5293.—**Growing plants in zinc pots**.—I shall feel obliged if anyone will inform me as to whether or not zinc is poisonous to plants. I have for some time past been trying to grow *Pelargoniums* and *Fuchsias* in zinc pots, and they do not seem to thrive.—INQUIRER.

5294.—**Quince caterpillars**.—Can anyone kindly advise me as to how to deal with a Quince tree which every year is covered with flourishing blossom, but which hardly ever produces more than one dozen Quinces, as each flower contains a fat green caterpillar, which eats away the entire calyx and ovary of the flowers?—H. S.

5295.—**Violets**.—I would be much obliged for information as to whether air ought to be freely admitted—and whether by night as well as by day—to *Marie Louise* Violets in rather a deep frame, where they are some distance from the glass. My gardener is averse to doing this. I believe that the plants have become mildewed for want of sufficient ventilation.—V. M.

5296.—**Diseased Pines**.—Can any of your correspondents help me in the following case: Our Pines are planted out in equal parts of peat and loam, in a bed 6 feet wide, 2 feet deep, and well heated with hot-water? When they begin to change colour the stems commence to get into a bad state, resembling shanking, close to the fruit. The variety is principally the *Smooth Cayenne*. Can anything be done for them?—H. KEARNEY.

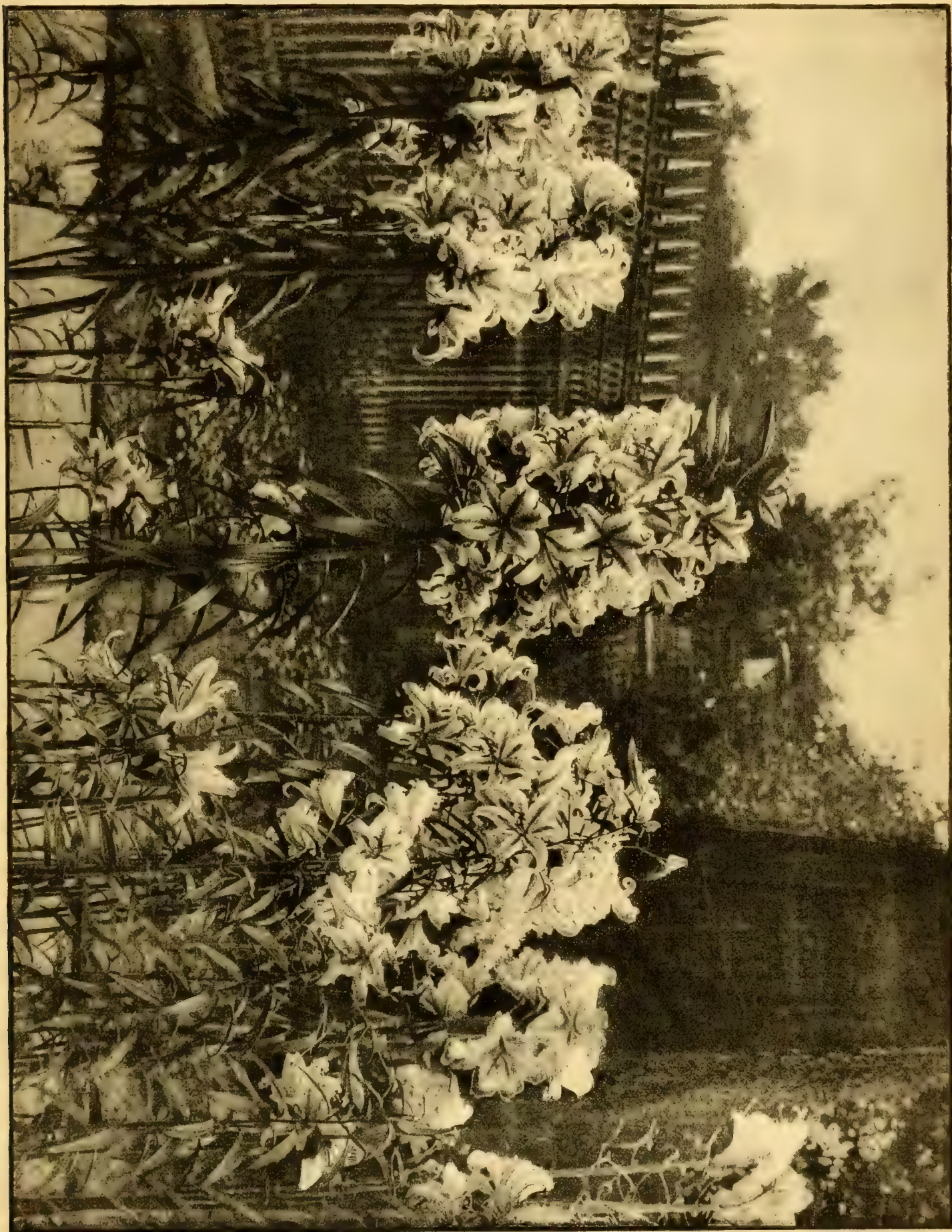
5297.—**Iris**.—I am trying to grow plants of *Iris Kämpferi*. I have potted them, having just received them from Holland, in a mixture of very rotten manure, sand, and peat. I propose to put them in pans full of water and then in a cold frame. Will that suit them? I had some last year and set them in the open ground, but they failed. *Iris susiana* I am treating in the same way, except standing the pots in pans full of water, but it does not flourish. Would both *Iris* be better off in a greenhouse in which the temperature does not fall below 45° or 50° at night? Will *Eucomis* succeed kept in the same greenhouse?—H. S. N.

ST. ANNE'S, CLONTARF.

YACHTSMEN in the bay, or the stranger who comes into Dublin by steamboat direct, may see Lord Ardilaun's suburban residence of St. Anne's nestling among the trees far away to the right of the city itself, and standing on soil which is famous in Irish history. Hereabouts on the sunny fringe of shoreland was fought the memorable battle of Clontarf, which put an end to the Danish power in Ireland. Here on this domain also is the once celebrated well of St. Anne, to the waters of which were attributed virtues of startling efficacy. It is simply a natural spring, uninfluenced by climatic changes, and from which a supply of the purest water bubbles upward at the rate of about fifteen gallons per minute. To this spot, in days not very far distant, many pilgrims came to drink of or to bathe in its waters. Even yet tradition and legend linger around the spot, and stories are told of the "good old times" when "pattern fairs" were held in booth or tent around the venerated well.

The house itself is a plain, but classic structure, its main proportions being very pleasing, and from window and terrace alike the most extensive and beautiful views are obtained. The rocky headland of Howth (originally called in Irish "Ben Edir," or "Cliff of the Eagles") and Lambay Island lie to the left, while to the right, looking across the bay, are the mountains of Wicklow towering skyward, and still more to the right the Dublin mountains are clearly seen. The charming views of sea and mountain, with a foreground of cool turf and fine trees, are perfectly indescribable, so lovely are the varied effects of sun and cloud shadow which they afford. There are some atmospheric effects, also quite peculiar to the country, which considerably increase its landscape beauty. The humid climate, while adding to vegetation a verdant luxuriance rarely seen elsewhere, also throws a blue veil over the mountains and adds a charm to the most striking of natural scenery. Thackeray noted this atmospheric glamour long ago, so also did the Baroness Burdett-Coutts during her recent visit, so that one cannot help regretting that Turner did not immortalise the scenery of Ireland as he did that of Italy and of England.

The mansion at St. Anne's is surrounded by some twenty or thirty acres of pleasure grounds, well planted, and, although naturally flat, most agreeably diversified by the landscape gardener's art. Since the property came to Lord Ardilaun's possession, on his father's death, he has spared no pains to improve its natural beauty and fertility, and a new entrance drive or avenue, about a mile in length, has been made to the house from the Howth Road. The drive itself is 24 feet wide, and the turf on either side is fringed by an avenue of Austrian Pines. In all alterations and improvements of a broad and permanent character Lord Ardilaun takes a direct personal interest, and that he has an efficient aid in his steward, Mr. Smith, goes without the saying. The glass houses are in good order, and are filled with ornamental plants in the most exuberant health and vigour. The demand for cut flowers and for conservatory or decorative plants is a large one, and is met in a practical and liberal manner, and the hothouses are now quite gay with *Chrysanthemums*, many and varied in form and colouring, with *Eucharis*, *Roses*, *Primulas*, *Cinerarias*, to say nothing of the hosts of things in store pits and frames to form a succession to those now available for use. *Dra-cænas* of various sorts, *Maiden-hair* and other Ferns, *Palms*, *Curculigo*, *Cyperus*, and *Cordylina* are all grown, and well grown in quantity. As we have said, flowers are in great demand, and the way these are cut for decorative purposes is worth noting. No short or skimpy bits of tall growing flowers or elegant foliage are tolerated. For example, *Torch Lilies*, *Pampas Grass*, *Iris*, or *Gladiolus* spikes are cut full length, so also with tall leafy things or Grasses, and the most natural effect is produced by these as tastefully arranged in tall jars or in trumpet glasses. A few good and graceful flowers are placed in each vase; there is no jamming all sorts of things together,



GROUP OF LILIES IN THE GARDENS AT ST. ANNE'S, CLONTARF (from a photograph, 1884).

and none of the archaic overcrowding common until the dark ages of floral decorations had passed away.

The Orchids at St. Anne's are especially worthy of note, being select and healthy, and we never saw *Lælia anceps* and its brighter coloured variety *Barkeriana* more luxuriant and floriferous than here. *Ceologyne cristata*, *Dendrobiums* of different kinds, and *Cypripediums* are vigorous, and *Lælia purpurata* is also throwing up strong, clean growths and showing its next year's flower sheaths in a way almost as delightful to an Orchid grower's eyes as are the lovely blossoms themselves. The painted flowers of the Indian *Crocus* (*Pleione lagenaria*) and one or two good varieties of the rosy *Lycaste Skinneri* are also blooming well. One of the finest plants of *Cattleya Dowiana* perhaps ever seen was exhibited in Dublin from this collection by Mr. Smith a year or two ago. I am afraid to say how many bulbs it had or their size, but the plant resembled a well-grown specimen of *C. crispata* in vigour rather than what it really was. It had five leading growths, and bore the same number of flower-spikes. The strongest of these bore six richly coloured blossoms, and the other four had five flowers each—in all twenty-six flowers—and the plant was a sight not easy to forget. The old *Oncidium flexuosum* is here quite a favourite, and a strong specimen of *Oncidium macranthum* in robust health is showing a stout spike. With the Orchids a plant of *Nepenthes Hookeri* is bearing very large and beautifully mottled pitchers, and a good variety of *N. Khasyana* is in great beauty. Here are some choice Ferns, also in excellent condition, such as *Davallia Moorei*, *Platycerium grande*, *Adiantum Williamsi*, and a specimen of *Clerodendron Balfourii* was a perfect picture at the time of my visit. A Rose house here is quite an especial feature during the spring and summer months, and a well-arranged conservatory adjoins the mansion, and among other choice plants it contains one of the finest specimens of the old *Cordylina indivisa* (true) I ever saw. Camellias also are very promising, and the rosy-flowered *Lapageria* on the roof is most healthy and floriferous. This conservatory is now resplendent with *Chrysanthemums*, great tall bushes laden with hundreds of flowers. Most of the best varieties, old and new, are represented, there being several hundred plants altogether on the place, comprising some seventy or more varieties. Elaine, Peter the Great, La Charmeuse, M. Henri Jacotot, and others are indeed most lovely, and a finer show of flower would be difficult of attainment. Beautiful as is the floral display under glass, however, it is

THE OUTSIDE DEPARTMENT which possesses the greatest charm for the real lover of good gardening, since this phase is far less commonly met with in any degree approaching perfection, the reason being that it is in reality far more difficult of attainment. If indoor gardening may be typified by painting, then outdoor planting for permanent effect must be represented by sculpture, and without a doubt when Bacon wrote his celebrated essay it was open-air gardening to which he alluded as being so rarely perfect. Of course absolute perfection is impossible, but at St. Anne's much has been done to deserve success, and Lady Ardilaun may reasonably be congratulated on having done much to beautify a place to which Nature herself has also been very generous. Just below the mansion itself is a beautiful bit of ornamental water, fed by the overflow from the well or spring before alluded to. Here in the summer months great fat carp lie in the shade among the Water Lilies, or come to the side in shoals to be fed, just as they do at Chantilly or at Versailles. The rosy Water Lily is here quite at home, and flowered last July in great luxuriance. The island on this piece of water is tastefully planted with Ivy, Yuccas, *Arbutus* (now covered with its pale wax-like flowers and red fruits), and other shrubs, and the surrounding pleasure grounds are well planted with choice conifers and other deciduous and evergreen trees. Some seedling varieties of Holm or

Evergreen Oak, reared on the place, are remarkable for breadth of leaf and luxuriance of habit. At one end of the lake is a pretty little water temple, and near the entrance on a dry bank, but within reach of the water, is a remarkable specimen of *Cupressus macrocarpa*, while on the adjoining lawn are some weeping Elms, beautiful in outline even now, when denuded of their leaves. Banks of mossy turf here and there are enriched with Daffodils, Cyclamens, and scarlet Windflowers, and one mound is just now covered with *Tussilago fragrans*, which, although an alien in Ireland, is abundantly naturalised here and elsewhere near Dublin. It is even thus early in blossom, and quite perfumes the air in its vicinity with an odour like that of *Heliotrope*. Near the waterside the Royal Fern (*Osmunda*) and the giant Saxifrage (*S. peltata*) are quite at home. Big bunches of marbled Cyclamen leaves stand out here and there in the Grass, and the flaming rods of the Torch Lilies or Tritomas have only just lately become dim, while silvery Pampas plumes shiver in the wintry sunshine. This little pleasureance is reached from the upper gardens through a sheltered ravine beside a Fern-fringed watercourse, with rising Ivy-clad banks, here and there an archway, and anon open glades, which springtime has for years past jewelled with Wood Hyacinths, Pæonies, scarlet Anemones, Snowdrops, and soft blue Apennine Anemones, the last being quite at home along with the pale trefoils of the Wood Sorrel and the golden buds and soft green frill of the Winter Aconite. This undulating walk is screened with interlacing boughs overhead, and the more open spaces have been well prepared and planted with bulbs of many kinds, notably with Crocuses, Anemones, and with Daffodils. If these nodding blossoms of the April days will thrive here, as it is hoped they may, this walk in springtime will be like a beautiful dream, as, indeed, it is in any case when carpeted with Ivy and Wood Sorrel or blue-flowered Periwinkle, and enamelled with Snowdrops, *Anemone apennina*, and with sweet Bluebells.

A new walk is to pass through rocky banks and to cross this ravine, the work being already in progress, and just below where it intersects the stream are shady pools with some striking Ivy-covered tree trunks beside them, and with golden Willows quaintly overhanging the water. Ivy grows remarkably well at St. Anne's; indeed, the clock tower at the kitchen garden is one of the features of the place, being clothed from base to summit, and thus having an air of antiquity which is rather surprising to learn it cannot claim. The Ivy-covered tree trunks—perfect leafy columns, 40 feet or 50 feet in height—by the pools in the ravine are so remarkable, that it is a wonder such good effects so easily to be obtained are not more generally seen, especially as the varieties of Ivy are now so numerous, and in the main so beautiful during the duller period of the year. Some day perhaps we may see a beautiful garden made by the use of Hollies, Ivies, Yews, &c.—in a word, with native trees and shrubs alone, unmarred by the exotic species which we too often see placed in positions that are unsuited to them. Some sheltered bays and nooks near the house itself are planted quite thickly with Crocuses, Colchicums, Scillas, several kinds of Muscari, and with Pau Anemones, and the tasteful way in which hardy Heaths are here used to fringe the shrub masses on the lawn is most agreeable. The old-established kinds are *E. ramulosa* and *E. stricta* or *E. arborea*, and of these the former is well established in clumps and groups 4 feet high or more, and seems to be just the one touch of colour wanting to unite the carefully dressed foreground with the blue mountains which rise skyward in the distance. Recently the collection of hardy Ericas has been supplemented with most of the kinds obtainable, and beds of them have been made on the turf with good effect.

Lady Ardilaun takes quite an especial interest in the more artistic phases of gardening, and to her taste and thought are due many of the prettiest pictures which spring and summer bring to this sunny garden. I can conscientiously say

that the herbaceous borders at St. Anne's are by far the neatest and best kept that I have ever seen. Just now all dead leaves and other rubbish is cleared away and the earth around the plants is covered with a warm coating of Cocoanut fibre, which gives them a dressy and comfortable appearance. The labels are made of deal, into the lower end of which is inserted a stout wire stalk, and while serving their purpose admirably, they are likewise durable. The herbaceous beds and borders are richly stocked, and while most things thrive satisfactorily, some plants absolutely luxuriate in a way but rarely seen elsewhere. Thus the scarlet *Schizostylis coccinea*, although strong and healthy does not grow so tall and stately as at Cong (see GARDEN, September 27, p. 269-270), his lordship's estate in Galway. On the other hand, the way in which auratum Lilies, *Agapanthus*, Jonquils, and that most lovely of all the flag Irises (*I. pallida*) luxuriate here is enough to compensate for many failures, and to see them (the Iris more especially when at its best) is enough to make one love flowers of all kinds ever afterwards. I never saw half so much *Iris pallida* in any hardy plant nursery as may be seen on the borders here, and even if it never flowered its foliage alone is most effective and quite different in form and colour from that of all other species in its class. But it is when the stout spikes appear above its broad glaucous leafage, when each branch is tipped with its satin-like blossoms of lilac hue, that one feels how noble this plant really is, rivalling, as it does, the choicest of tropical Orchids in its delicacy of tinting, texture of petal, and in having a fragrance withal of the most subtle kind. Here also are great patches of the old, sweet-scented Jonquil, a foot or more across, and already their Rush-like leaves appear through the soil. Another speciality is the best double form of *Narcissus poeticus*, of which Mr. Smith was so fortunate as to secure a large stock from an old neglected cottage garden, in which it had absolutely run wild. How happy, thought I to myself, as I wandered through the pleasureance at St. Anne's, ought all the old garden flowers to be now that they are welcomed back to the choicest of spots, the sunniest corners, the most sheltered nooks around our fine old country houses. What a happy *renaissance* is this to them to be brought back along with the Chippendale furniture and the quaint old pots and plate, and the literature which is welcomed, let us hope, not because it is old, not merely because a fleeting wave of fashion wills it so, but because these things, like the flowers, are true and homely in the best sense of that phrase. It is quite easy to understand how pleasant are the seasons as thus measured off for us by the growth and blossoming of our favourite flowers, and one may quite understand the personal interest that is here taken in all the shrubs and flowers of a good garden, seeing that they often are the gifts of friends or souvenirs of travel, and thus fraught with many pleasant memories. A good garden like this is the best of all remembrancers. I would much rather smell a spray of white Hawthorn (such as that which William Hunt painted, and which now hangs in the Water Colour Gallery at South Kensington) than I would look in a diary to see if May had really come, and so the time of white Lilies, the time of Irises, of Daffodils, of Snowdrops, of Violets, of Roses, or of *Chrysanthemums*, is far more agreeably told to us in the garden than anyhow or anywhere else besides.

Quite near the house is a quaint old Italian garden, surrounded and intersected by formally clipped Yew hedges, which remind one of Hampton Court, of Elvaston Castle, of Holland House, and of other old places where Dutch and Italian gardens with statuary were formerly the fashion. Formal and conventional as pleached hedges may be, they afford good shelter and seem to harmonise with the old-fashioned Daffodils and Pæonies, which our great grandmothers loved to cultivate and admire. White or marble statuary placed near to hedges of sombre Yew has a chilly appearance in our wintry climate, even when, as here, of the best, and a spotty effect is inevitable when it

is so employed. Good bronzes are far less objectionable in this way, and there are one or two from Herculaneum here in the grounds which are alone well worth a journey to see. Within the shelter of these Yew walls are beds of Carnations, Roses, Agapanthus, Pansies, Polyanthus, Primroses, Forget-me-nots, Lilies, Jonquils, and other spring blossoms, and here also is a fine group of the Alpenrose (*Rhododendron hirsutum*), among which we saw some noble clumps of *Lilium auratum*, tall and fair, one autumnal evening not long ago; and as seen in the gloaming, with the dark Yews as a background, it is difficult to imagine any plant more stately or more beautiful than is this wild flower of Japan. Clematises of various kinds do well here on walls and pillars alike, and C. Jackmanni, on a trellised bed, was very much admired during the past summer. Magnolias are even yet showing soft white buds among their glossy leaves; the grey tassels of the Garrya dangle in clusters beside the golden stars of the Winter Jasmine, and the fluffy seeds of the Traveller's Joy shine bright and silvery on the wire arches or against the grey walls. The late-planted Colchicums are barely past their best. I saw a tuft or two of *Crocus nudiflorus* fading away, and there were many buds and blossoms on some beds of seedling Anemones; and that the best of Christmas Roses are luxuriant there, of course goes without the saying. November is, as a rule, a dreary month generally, but that we should have found much to see and admire here at St. Anne's is, perhaps, the most sincere compliment one can pay to a good garden. B.

FRUIT GARDEN.

ORCHARDS ON FRUIT-SICK SOILS.

THE remarks of "J. C. C." (p. 451) on this subject deserve careful consideration; there can be no doubt that the plan of going on generation after generation planting the same kinds of fruit trees on the same spots where others have stood is, in a great measure, the cause of the miserable failures in the way of fruit orchards which we too often see, yet a remedy for such proceedings is almost hopeless, as the system of letting land is so full of prohibitive clauses as to defeat the very object for which they are drawn up. The copy of a lease two centuries old is still looked on as the perfection of an agreement that should compel occupiers to perform their duty towards the land in their possession for a given term of years. Under such circumstances it is useless to expect our home-grown fruit industry to prosper, and the sooner landlords set about reforming an agreement that reacts so prejudicially to their own interests the better. Looking at my own lease, I find it is distinctly stated that any kind of fruit tree dying or being removed is to be replaced by a young one of a similar kind, and in fruit-growing districts the replacing of old worn-out trees in orchards by young ones is rigidly enforced. I could point out hundreds of orchards that were old when I was a boy, the occupiers of which have been going on under the hopeless task of rejuvenating them by planting young trees, that never can do anything but linger on, the soil being literally worn out. The most that can be done in such cases is to remove a portion of the old soil and substitute fresh material, so as to give the tree a start, but as soon as the roots get beyond this failure is the result. The remedy is simple enough in holdings of sufficient size to allow the orchard to have a fresh site, but where a certain space is adhered to, all the knowledge of fruit culture which we possess will not help us. The best orchards which I have yet seen are those either cultivated by small landowners, or where the land is rented of owners who have given up restrictive covenants as useless. Of course, it is to landlords that we must look for planting on a large scale, and the first question that crops up is, Will it pay? Speaking from some years' experience, I can safely say that there are few safer investments than that of planting orchards.

In the neighbourhood of Maidstone there are very few farms without an orchard, and some

have several distinct orchards attached to them, and as the crop is sold by auction in nine cases out of ten, one can form a pretty correct idea of whether orchards pay or not. The usual custom is to have the orchard near the homestead and to use the Grass for sheep, calves, and young stock, and for this purpose the Grass is nearly as valuable to the farmer as his other pasture land; the close grazing, too, insures the fruit trees being kept well supplied with manure for the surface roots. The annual sales of fruit orchards take place during July, the buyers gathering the crop as it is fit for market and clearing it away, so that the farmer has no trouble with it. Orchards in anything approaching a fruitful condition rarely realise less than from £7 to £10 an acre; if the crop is good, they even range from £15 to £20 an acre, and, beyond the cost of trees and planting, there is really very little expense attached to them. I therefore feel confident that during the last few years orchards have been the most remunerative part of many a farm, even under the serious drawbacks of poor cultivation, owing to farmers having but little knowledge of fruit culture and being hampered with restrictive clauses in their leases. Of late years farms have changed hands too frequently for the good of the orchards, that, like gardens, are never satisfactory under rapidly changing management. The question of markets for the sale of fruit is undoubtedly one that ought to be taken into consideration, seeing that railway charges are far higher than they ought to be. It can hardly be said that we have reached perfection in the way of distribution when good fruit is abundant and cheap in some counties and at almost prohibitive prices in others. It seems incredible that fruit can be brought across the Atlantic and landed at our seaports at a lower rate than it can be brought from one side of this country to the other; yet such is the case, and our seaports are supplied with it on more advantageous terms than our rural towns, though the latter are surrounded by growers anxious to sell, but who, between salesmen's fees, rail charges, and other items, do not get their fair share of profit. Fruit is no longer a luxury, but a necessity, and therefore no obstruction should be placed on its sale. Growers of it would be well satisfied to allow twenty-five per cent. on their goods, but when they find over fifty per cent. put on them between the two parties just named, they feel dissatisfied, and the public are the sufferers.

Gosport.

J. GROOM.

PEACHES AT BURGHELEY.

ON taking charge here in 1868, that ever-to-be-remembered hot summer, I found the Peaches on the Peach wall proper literally roasted, so much so that I felt convinced they would never regain anything like a healthy state; I therefore stripped the wall at once, and after getting it repointed and all put in order, I commenced to trench the border 3 feet deep, and as the work proceeded, mixed with the existing soil a large quantity of chopped turf and burnt refuse. This work was done early in August, and the soil being dust dry, it had at least two months to get thoroughly soaked. Early in October I planted the following Peaches at 22 feet apart, viz., Royal George, Grosse Mignonne, Princess of Wales, Noblesse, and Violette Hative. They made very good growth the following season, and the second I allowed about one dozen fruit to ripen on each tree. From that time, year by year, they continued to bear and do well up to the ninth year, when they hung out signals of distress.

Next autumn, beginning in the middle of October, I lifted them all. I began at one end and lifted and replanted as we went along. This time I used chopped turf and burnt refuse wholly. We found the roots in fairly good condition, but deficient in fibre. We shortened the roots unsparingly, laid them all straight out, and well covered them with the mixture just described. Next season they made what may be termed short, but fruitful wood, and from that time to the present we have always had a crop of Peaches. I owe my success to two important items, and I

fully believe that if cultivators of Peaches would only take the hint to keep the trees thin of wood and clear of insects, particularly green fly, Peach culture outside might yet prove satisfactory. The whole of the trees are what are called half standards fan-trained. However beautiful a wall of well-nailed Peach trees may look, they are to me not quite satisfactory, inasmuch as they take too long to entirely cover the wall. Peaches being here always in demand, especially late varieties, I determined to plant a wall 130 feet long wholly with late kinds. This wall was planted almost entirely on the system so well described by Mr. Simpson. The two varieties planted were Princess of Wales and Late Admirable. The trees planted last season were maidens about 3 feet high; they were spurred well in, and now we are repaid with an excellent promise for next year, there being from ten to twelve shoots on each tree bristling with flower-buds. We therefore hope to have a good crop the second year after planting.

I may mention that we live in a locality famous for its Peaches. At Ketton Hall, five miles distant, I may say the finest collection of Peaches in any private place in England is grown, and under the most complete set of Peach houses it has ever been my good fortune to see. This place is under the care of a worthy and intelligent man, and will doubtless be heard of at no distant date. Not wishing to be behind in this matter, I am just now engaged in planting a third wall with early Peaches, and to make perfectly sure of having the true varieties, I have worked the trees myself, and intend planting them when the bud is dormant. My collection consists of the following varieties, viz., Alexandra, Amsden (an imported one), Hale's Early, Goshawk, Waterloo, and Early Albert. These will all be trained on the Wortley principle. R. GILBERT.

EXPERIMENTS IN VINE CULTURE.

AN additional fact or two under this head may be useful. I have fruited two Muscats this year; one is worked on the Black Hamburg and the other on Foster's Seedling, and I must say that the results have given me great satisfaction. The one on the Hamburg is much the better both in size of bunch and berry and also in finish; in flavour, too, it is everything that could be desired. The other on Foster's Seedling is not so good, but, nevertheless, is very satisfactory. As a rule, we do not get good Muscats on their own roots in our late house. Why it is difficult to say, as the other sorts do well. However, one thing I know; the border is very deep, and most probably the roots have gone down out of the reach of ordinary cultivation, and at present we cannot afford to risk the loss of a crop by lifting or replanting. Mrs. Pince we cut down two years ago. It was not good enough in appearance, though all right in flavour. I worked on the old stems, of which there were two—a Madresfield Court and Gros Maroc—and this year fruited them. The Madresfield Court was, however, a signal failure; it had not one good point. The berries cracked very much in the way in which this variety so often does, and the bunches did not colour, but retained that peculiar unripe look so characteristic of Mrs. Pince; the flavour, too, was inferior to that of either sort. This, I think, shows the influence of the stock in a very marked manner. Certainly it is not a stock to which one would look for the best results, but it was done for the sake of experiment. I will, however, try this Vine another season and note what happens once more. Fruit of the Gros Maroc I have hanging on the Vine at the present moment. It is not so well coloured, and the bunches are not so large as those of one of its own roots growing close beside it. I have this variety also on the Gros Colmar, but there is hardly any difference between the one on this stock and the one on its own roots. Here again the influence of the stock is perceptible by the way the two varieties on Mrs. Pince refused to colour, and having the two sorts growing on their own roots in the same vinery I had a good opportunity to compare them together.

GROS MAROC is a Grape that has had a good deal of attention paid to it lately, but in my opinion it will never gain many great victories in the fruit world. It is, I admit, a fine-looking Grape and has very large berries, but their flavour is indifferent. The finest bunches I have had of it were from a Vine worked on an old Black Hamburgh that was fifty years old or more. These were really splendid in appearance, far before any I have had on own-root Vines. The old Vine is now, however, destroyed, having made a new border for young ones. Here was an instance of the way in which Vines will recover after long years of service. We made the new border inside, leaving the old Vines outside until the young ones were ready to take their place. Arches were made in the front wall to allow the roots to get outside when they became established. Well, the old Vines the first season very soon found out the new soil and made excellent growth, strong and luxuriant, and last summer carried some grand Grapes. Now I have no doubt that these Vines would have gone on for several years in this new border and carried good crops had they been encouraged to do so. But the die was cast, and they were uprooted to make room for young ones, whose roots are all inside at the present time, and I shall watch with interest how long it is before they take possession of the outside border.

Redleaf.

W. H.

FRUIT TREES FOR NORTH WALLS.

We have several north walls here all of which are covered with trees, but some are much more fruitful than others. Morello Cherries, which some might be inclined to plant against north walls, grow luxuriantly in this position, but we never found them fruit so freely as on a north-west aspect. This is our favourite position for Morello Cherries; we never had them fail on it, but we cannot say so much about a north aspect. Gooseberries and Currants succeed admirably on a north wall; indeed, they are the only crops with which we would deal in such a position. With us they not only grow freely, but fruit profusely, and very often when the bushes are thin of fruit in the most favourable positions, those on our north walls are carrying full crops, the reason doubtless being that favourably situated bushes bloom early and are often nipped by spring frosts; whereas those on a cool north aspect are late in blooming and escape. The succession of fruit secured from plants on a north wall is worthy of consideration; they do not begin to ripen until those in our sunny quarters are matured, and they remain sound and good long after the latter are over. This is a great advantage, and one which would be appreciated everywhere. Large quantities of our main crop Gooseberries and Currants ripen here in July, and it is only the north wall ones which we are able to keep sound until well into September. Black Currants, Red and White Currants, and all varieties of Gooseberries succeed on north walls. In some places there may be borders of good soil along the bottom of the walls, and in such cases planting is easily done; even when places have to be entirely prepared for the bushes, little difficulty need be experienced, as a trench has only to be taken out and good soil substituted before planting. A trench 3 feet or 4 feet wide and 2 feet or so in depth will hold sufficient good soil to keep the plants going on well for many years. Where paths run close to the wall fill up almost to the top, as in other cases, plant, and then re-make the walk as before. Some of our best north wall Currant bushes were treated in this way half a dozen years ago, and they have had no root attention since. Now, and on until the early days of March, is a suitable period to plant. As to distances apart and style of training, we prefer putting the plants in from 2 feet to 3 feet apart, and taking from three to six branches up from each, training them at equal distances asunder, and restricting them to straight shoots clothed with closely-set spurs. These come out of their own accord, and are kept

fruitful and in proper form by pruning in the usual way. J. MUIR.

BELGIAN FRUIT EXPORTATION.

M. RODIGAS states in the *Bulletin d'Arboriculture Belge* that in eleven years the value of fruits exported from Belgium has increased by nearly £74,000, and what renders this the more remarkable is that in Belgium within that period the most severe winter of the century has been experienced, viz., that of 1879-1880, and yet the value of the exports in 1882 amounted to nearly £170,000. Notwithstanding these facts, however, "J. C. C." declares that in Somerset good Apples are practically unsaleable, as the price realised is so low in the great markets as to leave no margin for the producer when the cost of transport some ten miles across country to the railway station and from thence to London or elsewhere is reckoned up. How is this? Does the fault lie in the kinds, the packing, or the culture? Perhaps the following extracts may help to throw some light upon these matters:—

PEARS.—"All Pears," says M. Rodigas, "are saleable, but all are not of equal market value. Early kinds fetch good prices independent of quality, and quickly find buyers for exportation. It suffices to mention the variety Koolstok, of St. Trond, of which there exist in the vicinity of that town and of Tongres and Laoz large fine trees that bear regularly and abundantly. The fruit from them is sold on the ground at an average price of 24s. for 2 cwt., and is sent away by boatloads for exportation to England. It is so highly esteemed, that the fruit merchants acquire all the produce in advance sometimes as early as the month of May. The varieties Kriekpeer and Dyzeling, grown largely at Waarschoot and Sleidinge, in Western Flanders, are but little better than the Koolstok, a fact which does not hinder them from being sold at a high price, the last named for the market of Ghent, the other for exportation to London and Manchester. The keeping Pears that are sent to St. Petersburg must of course be of good quality. The packing varies according to the kind and destination. In any case the quantity of fruit grown should be sufficiently large to bring buyers to the spot and to justify incurring the expense of exportation. We do not yet possess those large orchards such as that of Surrey, in Virginia, which contains 38 acres in a single piece, and consists of 19,000 trees of Williams' Pear and 1000 Clapp's Favourite, and which produced in 1882 £3000, or more than the half of the capital engaged in the undertaking. What we have said of the Koolstok Pear gives cause for reflection, and we ask ourselves why the principal growers in agricultural centres do not come to some arrangement to grow the same variety or varieties; they would obtain an assured profit.

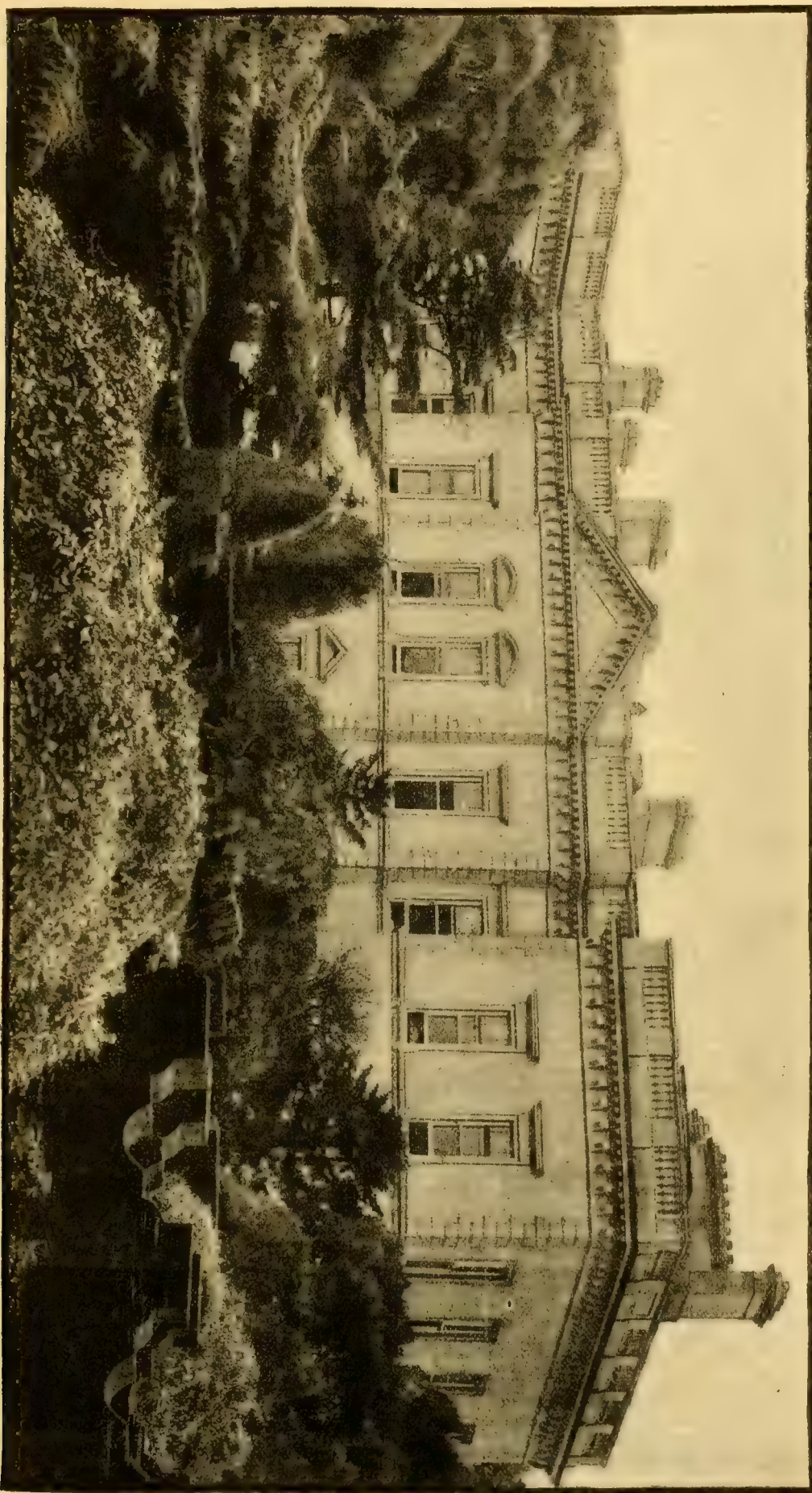
THE FRUIT FOR EXPORTATION is gathered before it is quite ripe. The early Pears in the St. Trond district are packed in baskets rather wide at top and narrow at bottom, so that there should be no great weight on the bottom layers. At the bottom of the basket is laid some fine dry Grass, the top layer being also covered with it, so that the lid gently presses upon it. It will not be out of place to make a remark from which the agriculturist may derive some benefit. All these baskets are made of peeled Osiers, and are sold in England for household purposes. In the fruit centre that we have just mentioned the manufacture of these baskets has acquired a real importance, a certain maker furnishing to the St. Trond dealers 80,000 of them yearly. The value of the Osier grounds is of course high in proportion. An Osier bed situated on the Meuse, and belonging to my family, produced thirty years ago a revenue of about £32, whilst now it amounts to £70, or more than double. Autumn Pears gathered in a dry time and well wiped are carefully sorted. The small fruits are used at home, the middle sized ones are packed in baskets, as already mentioned, and the finest are sent away in flat baskets or in boxes. The pains taken in packing is in accordance with

the value of the goods, the hard kinds of easy transport being simply laid in the baskets, whilst the others are each one wrapped in soft paper and laid in layers, the foot-stalks inclined one way, so that they do not injure one another. Each row is separated from the other by a sheet of paper, and there is at the bottom some dry Moss or cut chaff. A point not to be forgotten is to keep from the packing material anything that is likely to impair the flavour of the fruits, even if only momentarily. Thus I one day received a small box of splendid Besi de Chaumontel Pears, but having a strange flavour, and on examination I found that the box had contained perfumed soap. It is prudent to avoid the use of boxes having labels on them. With respect to keeping Pears, if sent away before winter there is nothing to prevent their being packed in bags or baskets, only that they require careful supervision to prevent bruised fruits from spoiling the others. Choice fruits sent to a distance must be wrapped in paper. The fine Pears of Tournaisis, which are sold for as much as 4s. 6d. at St. Petersburg, are packed a dozen together, in two layers of six, in thin wooden boxes, lined inside with wadding. These boxes are placed inside solid cases, marked on the top, and fastened with screws to admit of easy examination by the Custom House officers.

APPLES.—The same rules apply to these as to Pears, but they offer the advantage of having a short foot-stalk, which does not interfere with the packing arrangement. The tender-fleshed kinds are the least esteemed, save those that come in early, and they are packed in exactly the same manner as the Pears. Others which are late in ripening and are hard in flesh are gathered in fine weather, and are put in heaps under shelter until a certain amount of evaporation has taken place; then they are sent off, either loose in trucks or in bags containing 2 cwt., or in barrels containing two or three times as much. Baskets should be strong enough not to bend easily, or the fruits at the sides are liable to become injured. In some localities a little straw is placed at the bottom, round the sides, and at top, although this precaution may be considered as useless labour. Since our fruit merchants saw arrive in perfect condition Apples packed in barrels and sent from Canada and other parts of North America, this kind of packing has become popular in our own country. If the barrels have not often to be unshipped, they may be constructed of light wood, only they should be strongly bound round; the inside must be perfectly clean. The fruit is carefully dried and cleaned, one kind at a time being taken, without small or bruised fruits, and is carefully laid in, a few light, but repeated shakings filling up empty spaces and making all solid. If despatched in winter, the barrel may be enveloped in straw, Grass, or even in another barrel. We would, however, observe that Apples touched by frost come back to their normal condition, providing that the thaw takes place gradually. The barrels rather more than full are closed at the top by means of special pressure, and it is therefore inevitable that some of the topmost fruits get injured. We have seen unpacked at Ghent American Apples packed in barrels, and which, after forty days' voyage, remained in excellent condition, with the exception of a few which had become in a great measure flattened. The fine dessert Apples, and those remarkable for their handsome appearance, may be sent either in flat baskets, one or two layers in each, or in small cases, depending on the quality or rather the value of the goods. Dry Moss which has been well washed, or, better still, soft paper should be used to line the sides and divide the rows or layers of fruit.

CHESTNUTS.—London alone absorbs 12,000 tons of Chestnuts yearly, of which France contributes 5000. The method of packing is simple; the fruits are gathered up as they fall, being shelled and laid in sheds to dry, after which they are put in bags or in baskets and sent away at once.

NUTS.—The commercial culture of the Nut is very remunerative; it is valued at an average return of £70 an acre. In the northern districts of the Netherlands, in the fruit country of Streek,



ST. ANNE'S, CLONTARF. FROM THE GARDEN. (See p. 513.)

the average yield is estimated at over £100. Nuts are gathered by hand, spread out in a covered, airy place until they fall out of the husks, and are sent away either fresh or quite dry in bags, baskets, or in boxes.

"WALNUTS.—An eminent French agriculturist, the Comte de Gasparin, has declared that sixty Walnuts on an acre of ground are equal in value to the ground on which they stand, and are capable of bringing in £45 per year. In the fruit centres of Belgium, Limburg Walnuts are in great demand when half grown for preserving. They are generally packed in bags whilst still in their green shells, but in the dry state and shucked it little matters whether bags, baskets, or boxes are employed, provided the contents are perfectly dry." After reading the above, one cannot help coming to the conclusion that we have much to learn in this country ere the culture of some hardy fruits, notably the Apple, can be made really profitable. The chief cause why foreign Apples and Pears sell so well in this country, and thus their culture is a profitable industry, lies in the fact that certain kinds suitable to the locality are largely grown in certain districts, and that such great care is taken in the gathering and packing, that buyers know what they are going to get; they can depend upon the sort, size, and general condition of the fruit. To such an extent is confidence reposed in growers and consigners of foreign fruits, that English fruit merchants are often known to pay beforehand for goods ordered. It is to be feared that this great care is not too frequently exercised with us, and that the mixing of inferior fruits with fine samples, and careless or unskilful packing, generally reduces the value of many otherwise good fruits. In a word, English growers generally do not seem to know how to make the most of their goods. A large Covent Garden salesman one day showed me some excellent samples of Kentish Blenheim Orange Apple. They were in admirable condition, but would it be believed that the grower had actually had the folly to pretty liberally mix with them some of another totally different and wholly inferior kind? This individual had sent the same kind of Apple to market for twenty years, and persisted in a practice calculated to lessen confidence and impair the value of his goods, and, said the salesman referred to, "I can't break him of it." Everyone knows the value of a good name, and if a certain class of fruit coming from a certain locality can be depended on to answer the wants of buyers they will gladly purchase without question. An instance of this occurs in the Goff Apple, which is largely grown in some parts of this country, and although consigned to London fruit salesmen, they pass but little of it through the markets there; it is sent onwards

without examination to the preserve makers. I cannot but think that this would be the case with any good market kind carefully gathered and properly packed. J. CORNHILL.

Byfleet.

PRUNING AND DRESSING FRUIT TREES.

APPLES and Pears require the first attention in this way; the former, if grown as standards, only require thinning, and this should be done annually by removing any branches that cross or crowd the others, the object being to give full light and air to all, that the sun may act on every part, and so colour and ripen the fruit. The best implement for the work is a small fine-toothed saw, set rather wide, as it will then clear itself in the wood and cut easily, but to make the wounds smooth it is necessary to finish off with a knife, the smooth surface being important to the healing over of the bark and to throwing off the wet. Besides the thinning out, to keep the middle of the trees open and clear, it is sometimes advisable to shorten the leaders, especially where any branch is extending itself in such a way as to affect the symmetry of the head which ought to be kept regularly balanced, or the trees soon have a very awkward appearance. Bushes and espaliers require the knife instead of the saw, but in cases where they are neglected or old the saw is needful for espaliers, as drastic measures have to be resorted to to get rid of the old long spurs, which sometimes may be seen so crowded as to look like a hedge. When trees get into this state, the best way is to thin out rather severely by taking off the greater portion of the spurs or shortening back to the last eye or shoot near the base, for if they are healthy they will break again, and with proper summer pinching or stopping soon form plenty of buds. The same remarks apply to Pears, which are even more amenable to this treatment than Apples, and, therefore, anyone having them sticking out far away from the wall need feel no hesitation in using the knife freely, and if they do this yearly and leave a fair sprinkling of flower-buds, the trees may be got in good order without losing a crop. This is how we managed ours, and though the trees were more than fifty years old and had long gnarled spurs, they appear quite rejuvenated, and are studded close to the main branches with buds. It is the same with the pyramids, which we treated in like manner, thinned, and shortened, and not only did we do this, but we removed many of the branches so as to throw all the others from 18 inches to 2 feet apart, and thus have them regular all over the trees. To keep these within proper limits and make them handier for gathering the fruit, the height of all was reduced to 10 feet, and the result has been that the branches are all stiffer and we get much finer Pears, as before the reduction of the spurs these were in a great measure starved, owing to the check the sap had in its passage to feed them.

STONE FRUITS.—Apricots and dessert Cherries also bear shortening back well, and both of these should be closely spurred, as when they project far much of the protection the wall affords is lost, and the blossoms, standing out, get cut by the frost or perish through keen winds blowing on them; whereas, when nestled against the bricks they are safe, and generally set well in spite of the weather. In the management of Apricots, it is always advisable to have two strings to the bow by laying in some young wood in all available vacant places, but on no account should it be done in a way to crowd or spoil the look of the trees. If these are of the fan shape, which is the best form, every shoot left should be on the upper side of the branch, and so nailed or tied when young that there is no elbow or ugly bend, as these cannot be got rid of after; and the same with Peaches, each twig of which should be close at the base and run out straight to the point, keeping parallel with each other and from 3 inches to 6 inches apart, which is quite near enough for the wood. Plums will likewise bear close spurring, but to prevent any dying back they must be cut to a bud,

which can be done and a general thinning made, as it is useless to leave more than will produce sufficient flowers to set for a crop. The usual way of treating Morello Cherries is to train after the manner of Peaches, but much time may be saved and better results secured by just thinning out the shoots and fastening the main branches to studs driven into the wall, and thus letting the trees grow pretty much as they will in the making of breast-wood, as when the foliage is more away from the bricks it suffers less from red spider or fly, which are kept at bay or washed off by the rains.

BUSH FRUITS.—Black Currants need but little pruning, as all that is requisite for them is to keep them from becoming too crowded, which may be done by timely thinning or cutting away in the middle, and this ought to be carried out without leaving any long snags or ends. Red and White Currants do best spurred, as the majority of the fruit buds are formed around the spurs all up the main branches, which should be about 9 inches apart, and the shoot at the top of each shortened, or the bushes soon get too high and run bare at the base. Gooseberries ought to be treated in a similar manner, but with these much depends on whether the fruit is wanted for gathering green or ripe; if the former, the wood may with advantage be left considerably thicker, as in that way the produce is much greater, and by the shelter the foliage affords a very heavy crop is often secured, when on thinner bushes it is cut off by the frost. If the fruit is required for dessert, the best way is to have all the main branches wide apart and to cut back the young shoots on them to the last bud, except any that may be wanted for filling up and adding to the size or symmetry of the tree. Many defer the pruning of their Gooseberries and Currants on account of the sparrows picking out the buds, but there need be no fear of these feathered depredators if the bushes be limed, which may be done very easily and quickly by making a wash and passing it through a syringe. To do this, fresh quicklime should be got and slaked in a body of water, and then strained through a fine sieve, when not only will the wash so prepared stick tightly and keep off all sparrows, but it will effectually rid the bushes of all Moss and make the bark healthy and clean, besides which it prevents the breeding and spread of caterpillars now in the ground.

MOSS AND LICHEN are the ruin of Apples and Pears, but the same remedy as that mentioned for the Gooseberries will cleanse them, the best way of putting it on being by the aid of a garden engine, by which the wash may be driven higher and further than anyone can force a stream through a syringe. To get the wash to adhere, the bark of the trees should be a little damp, and it is likewise necessary to have a still day for the operation, or the wind will carry the wash away from where it is aimed and make the work difficult. The dressing of trees on walls is a sheer waste of labour, as all insects, of whatever kind, may be destroyed by very simple and cheap means, viz., the burning of sulphur, the fumes of which, passing up the surface of the wall, are so searching, that no parasite can live, as they not only kill the insects in or on the bark, joints, or bricks, but shrivel up every morsel of Lichen or Moss that may be growing on either. The way to carry on this most successful of all famigating is to get some old cracked garden pots, pans, or any other vessels with a charcoal fire in them and stand them a yard or so apart, when sulphur should be thrown on, and after standing a few minutes, the pots should be moved, and carried on in that manner all round the garden where the wind or draught serves, a still, thick day being the best for the purpose. S. D.

Autumn Raspberries.—Only those who force Strawberries early in spring can hope to have them abundantly in autumn, but autumn-bearing Raspberries can be grown by all, provided they procure the right sort. Give them high cultivation, and in pruning cut down the whole of the

old canes in winter, the fruit being borne on the extremities of the same year's shoots. Mr. Barber showed a grand dish of Belle de Fontenay from Hindlip in his premier collection of fruit at Birmingham a short time ago. Early in October I saw the plantation from which these fruits were gathered, and it was something to remember; they were growing on a protected wide border with an east aspect, and were trained vertically to stout poles; the canes were remarkably strong, and their points drooping with great clusters of large richly-coloured fruits, the flavour of which was excellent.—A.

Devonshire Buckland.—This is an extremely useful Apple; but is "W. I. M." right in recommending it for a dessert fruit? However, if King of the Pippins is the best flavoured Apple grown, I have no right to express an opinion one way or the other. It can hardly be for excess of fertility that it has obtained its premier position. If trees on the Paradise stock are to be the most general method of culture for private gardens, at least six dessert kinds are as prolific, and they include Cox's Orange Pippin and Syke House Russet. Mr. Blackmore once described a Pear, in a letter of his, as being fit only for the public. Looking through Mr. Cheal's fruit list, I was somewhat surprised at not seeing in it the White Nonpareil. It is a distinct Apple from the old Nonpareil, and is a most free-bearing variety when trained cordon-wise on a wall. In size, as might be expected, it is increased, and in quality it is quite equal to the other Nonpareils.—C. A. M. C.

Beurre Diel Pear.—It is pretty generally known that soil influences the flavour of Pears a good deal. I never had this fact so clearly demonstrated as during the present season, when judging at Exeter at the end of October and at Taunton in November; I then had an opportunity of tasting several different samples grown in widely different places, and the flavour of some of the fruit was so superior to that of others, that one could hardly believe that all belonged to the same variety. This sort is, however, so well known, that a mistake is impossible. In the best fruit, which was highly flavoured, there was an absence of all grittiness in the flesh that is so characteristic of this sort in some soils. With us it is always hard, gritty, and flavourless. We, therefore, only value it for culinary purposes. But in a soil that suits it it is well deserving of cultivation. Being a hardy, free-bearing sort, it may be grown on east or west walls, and in some favoured places it even does well as a standard.—J. C. C.

SHORT NOTES.—FRUIT.

5284.—Fruit trees for a north wall.—["J. A. C." (p. 450) will find no difficulty in cultivating either Gooseberries, Currants, or some of the hardier varieties of Plums on a north wall, such as Rivers' Early Prolific, Mitchellson's Damson, Denyer's Victoria, Pond's Seedling, Diamond, or Belle de Septembre.—W. C. T.]

I find Lord Suffield Apple trees to do better on a north wall than anything else I have tried. These with me bear regularly very fine fruit, which succeeds that grown on pyramids. Gooseberry trees would grow and fruit in such a position, but the latter would be indifferent in flavour.—J. C. C.

Hoary Morning.—Splendid specimens of this Apple have come to us from Mr. Garland, Killerton, Exeter. One which we measured was 4 inches wide and 3 inches high, and unusually high coloured. In short, it is the handsomest Apple we have seen this season.

Pear Pitmaston Duchesse.—I have met with a few samples of this Pear this year, and for the most part they have been very fine. They have been golden in colour, overlaid with russet spots, but in no case has the flavour been such as would entitle it to be classed as a first-class sort. Well grown samples are certainly very handsome, and that is about all that can be said in their favour.—J. C. C.

Pear Madame Chaudy.—This was raised by M. Chaudy, nurseryman, of Chaponart, near Lyons, about twenty years ago, but was only distributed in 1881. The tree is said by the raiser to be vigorous and fertile, in these respects resembling the Duchesse d'Angoulême. The fruit is large—sometimes very large—in shape like Bon Chrétien; skin yellow, a little bronzed sometimes and slightly tinted red on the sunny side; flesh white, fine, very juicy, sweet, and perfumed.—J. CORNHILL.

A forgotten fruit.—The Service Tree (*Pyrus Sorbus*) was, we believe, once used as a fruit somewhat in the same sense as the Medlar is. We had no experience of the value of the fruit till lately, when Mr. Charles Leaf sent us some of it. When ripe and fresh its astringency was most marked and unpleasant, but, putting it by for a week or two for the sake of the seeds, we happened to taste it again by the time it had blotted and got quite brown. The flavour was excellent, somewhat like that of a Medlar, but distinct and quite superior to that of the Medlar. This tree is not only rare as a fruit-bearing tree in this country, but even planters caring for trees do not know it when they see it. We should say that amateurs fond of curiosities might at least amuse themselves and puzzle their friends with this uncommon fruit. It is in condition in December, and would probably with care last over Christmas. Have any of our readers any experience of it? In shape it is like a little Pear, and some of the specimens are nearly as large as a small Green Chisel. With care and thinning no doubt it might be much improved.

BOOKS.

APPLE CONGRESS REPORT.*

MR. BARRON, the director of the Royal Horticultural Society Gardens, at Chiswick, with his coadjutors, may be congratulated on having brought their labours to a (temporary) happy conclusion by the issue of their report of the Apple Congress. That they have accomplished no easy task may be gathered from the fact that they had upwards of 10,000 dishes of fruit, grown on different soils and in different situations, to identify and to assign to them their true names. Doubtless their labours were occasionally unduly increased and rendered more difficult by some growers, and particularly amateurs, not sending average specimens representing the true type, but in some cases abnormal examples chosen for their size, or for some peculiarity; this we have ourselves observed at the congress, as at other shows. By dint of perseverance and attention, a correct analysis of the best varieties has been secured. Mr. Barron has given us a list of 1530 exhibits with their proper names and synonyms, but out of this large number he has selected only 120 varieties possessing sufficient merit to render them valuable to the cultivator. Those rejected by him were considered too small for general use. Thus amongst culinary Apples the committee ruled, that as so many of large size were in cultivation, all under 3 inches in diameter must be discarded, excepting a few specially adapted to certain localities. Those particularly recommended for general use are (at the head of the list) Lord Suffield, Dumelow's Seedling (known in London as Wellington and in the north of England as Normanton Wonder), Keswick Codlin, Warner's King, Hawthornden, Grenadier, Peasgood's Nonsuch, and others, to the number of sixty.

The most popular dessert Apples appear to be King of the Pippins, Cox's Orange, Ribston Pippin, and Blenheim Orange, with several others—sixty in all. It will henceforth be desirable for the nurserymen to keep only the best sorts, and to do away with varieties not adapted for profitable general cultivation. At the same time in so doing, some kinds which have long been local favourites, flourishing exceptionally well in certain situations, might be needlessly sacrificed. Leaving profit out of the question, there may be quiet nooks still left in old-fashioned orchards and gardens where these discarded favourites (like de-throned sovereigns), around whom pleasant associations perhaps cluster, may find a home and culture. While we are anxious to bring the cultivation of the Apple to perfection in this country by the selection of the best sorts and their proper treatment, we should regret the utter destruction

of time-honoured varieties, old friends of our childhood, the probable ancestors of new and more showy favourites. On the other hand, the Apples named by the congress cannot be regarded as forming complete and exhaustive lists of the best and most desirable sorts to cultivate in all cases. Many kinds exist which are comparatively little known, and, owing to the early date of the congress, were entirely absent, or occupied much lower places in the lists than their merits entitled them to fill, such as Pearson's Plate, Melon, Grenadier, Prince Albert, Frogmore Prolific, Lady Henniker, Golden Spire, Schoolmaster, and Bramley's Seedling. The last named, a new variety approved by the committee, received a first-class certificate. As the congress met so early in the season, and as the arrangements were unavoidably somewhat hurried, we cannot be surprised that a large percentage of the exhibitors hailed from the southern counties, while comparatively few came from the north or the midlands. Hence the congress did not represent all the best Apples grown in this country, while more than half the exhibitors came from the south of England, and only seven from Yorkshire, a county which produced the Ribston Pippin unrivalled in its way, a fruit which will always hold its own. It has stood the test of time and competition, and has been the progenitor of two Apples which obtained nearly the largest number of marks at the congress—Cox's Orange Pippin and Cox's Pomona. These we consider the best Apples grown and the most suitable for general culture. On referring to the valuable literature on the subject of Apples, we feel assured that there are other Apples in our northern and midland counties which might prove formidable rivals to those we have mentioned. Some of these, grown in the north and in Scotland, are probably hardier in constitution and better adapted to our changeable climate, and for this reason might be of great service to the cultivator if they were better known. We think that one object of a congress like that we are considering should be to draw fruit of merit from undeserved obscurity and give it a place in our lists of useful Apples. We would suggest that another congress should be held on the next favourable opportunity in one of our northern cities—York, Manchester, or, better still, Edinburgh. Let plenty of time be given and growers have sufficient notice, and let the date of the meeting be fixed late enough to enable exhibitors to show their Apples in full perfection. It would be curious to observe whether the committee would be likely to modify some of their late decisions. We felt a pang at the unfavourable reception of the Court of Wick (a delicious dessert Apple), and of one or two others, of which the best specimens may not have been exhibited. Let us hope, however, that the work of the congress of 1883 (on the whole so auspiciously commenced), may go on and prosper. It may be said to mark an era in the history of pomology, but we are only at the beginning of the end which its promoters have set before themselves, *i.e.*, improvement in Apple culture and the selection of the best kinds for private use, for the purposes of commerce, and for the manufacture of cider. Among other things the classification of the fruit ought to be more definite and scientific. We think that the one adopted might be improved upon. Each fruit has its distinguishing features and character with certain variations dependent on soil, climate, and treatment, but would it not be possible to arrange all Apples under the different heads of "Calvilles," "Codlins," "Pippins," "Reinettes," and "Russets," to which last the French give the name of "Reinette Grise"? or is the great difficulty in this direction caused by the frequent crossings which in some cases have hopelessly confounded the different types? We may here say that we consider Calvilles occupy in France much the same position that Codlins do in this country, and that Reinettes and Pippins are synonymous terms. This arrangement would much simplify matters, and there seems no reason why it should not be generally adopted, taking care that every deviation from the type is carefully noted. We do not

entirely approve of the manner in which the congress has judged the Apples by awarding marks according to the number of exhibits. We think that marks should be given for the general usefulness of the tree and the quality of its fruit. One great object of the congress is the diffusion of accurate knowledge as to the best sorts of Apples and those which prosper most under the climatic influences of different parts of the country. For instance, an Apple which would be prolific in bearing, producing fine fruit of average size in the genial climate of Hereford or Devon, might bear but a scanty crop of poor dwarfed, flavourless character in the hardier orchards of Northern Britain. Pomological knowledge is somewhat neglected in England, though it is receiving great attention in France and Belgium. Here let us offer a tribute to the memory of the late Mr. Rivers and to his efforts in this direction. He may be regarded as a pioneer in the work of the regeneration of orchards. To him we owe many valuable varieties of different sorts of fruits, and he may (as far as practical knowledge goes) be considered to have attained to the exalted position in this country which André Leroy occupies in France.

Perhaps we ought, in saying this, to take into account the very backward state of pomology when Rivers began his labours; whereas Leroy, a descendant of a family of noted gardeners, reared in a school of pomological tradition, had his materials ready to hand. Rivers was one of the first to point out the necessity for the careful planting of properly selected sorts, and of assiduous cultivation with regular and scientific pruning. He suggests that an agreeable and eligible investment might be made of an acre of Cox's Orange Pippin, for that, even in moderate seasons, the price paid for the land might be realised in two or three years. In passing through the country, it is painful to see the neglected, uncared-for orchards of cankered, Moss-grown trees; instead of being well grown and properly pruned, with their fruit thinned, they are left to their own devices to grow as they like. To look at them you might imagine that timber, and not fruit, was aimed at; in many cases the Apples are no bigger than Crabs, and really only fit for pigs. The possessor of such an orchard sometimes wonders that some years he has no crop, or only a small one. He need not wonder; he has allowed his trees to exhaust themselves in the production of an almost useless profusion of poor fruit; they have, therefore, no vitality left to enable them to bear fruit the following year. The congress will doubtless do much in the way of stirring up the energies of fruit growers, and of giving increased interest to their labours. We often regret that instead of continuing to re-plant on the old sites of worn-out orchards (as is constantly done), where the soil is actually tree-sick, new spots are not chosen. It has likewise often occurred to us that in the many exhibitions which are held all over the country (for have not all towns and many villages their local shows?) instead of giving all money awards for fruit and vegetables, the prizes should consist of fruit trees of good sorts. This has already been successfully done on a small scale by Mr. Ingram, of Belvoir. In this manner a knowledge of the best kinds, so long almost entirely confined to nurserymen in large towns or to experienced high-class gardeners, would be disseminated throughout the country. Everything is in the grower's favour. Nowhere in the world are finer Apples produced than in England, where it is allowed on all hands that the soil and climate are particularly suited to them. The best imported ones cannot compete as to appearance and value with the specimens to be met with in our large markets and on the tables of the wealthy. When we survey them and taste their delicious flavour, we might almost believe they came, like the fabled Apples of old, from

Fair classic isles beyond the enchanted seas,
The fadeless gardens of the Hesperides.

It seems probable that the Romans introduced the Apple into Britain, as those great civilisers of the northern races possessed 26 varieties.

* "British Apples." Report of the committee of the National Apple Congress held at the Royal Horticultural Gardens, Chiswick, October 5 and 25. Prepared by Mr. A. F. Barron. Macmillan & Co.

Several names of English towns of Celtic derivation originate from the Apple, such as Apple-durcombe, Avalon, and some Norse or Danish names, as Appleby, Applegarth, Applethwaite. We read in an ancient chronicle that baked Apples formed part of the ploughman's food in the 13th and 14th centuries. An Italian who travelled in England towards the close of the Middle Ages speaks of it as a paradise of gardens and orchards, and describes the fruit trees as excellently cultivated. So much for ancient times. Let us in these modern days, with every appliance and many advantages, do our best to improve the culture of this excellent fruit. One objection urged against a greatly increased production is the difficulty of finding regular markets. This can hardly be valid when we consider the very large quantity annually imported. May we not hope that this importation may in time become unnecessary, and that Apple growing will become entirely a native industry. It is true that in abundant seasons it has not always been easy to find purchasers for the surplus, but that surplus often consists of very inferior specimens, while in all seasons Lord Suffield, Bramley's Seedling, Cox's Orange, Ribston Pippin, and other good kinds command a ready sale. We would press upon the attention of the young gardener and the amateur the importance of the careful study of books devoted to pomology. At the head of the list (for students of French) stands Leroy's exhaustive work, a book full of interest and a mine of intellectual wealth. It has been said that the man who makes two blades of Grass grow where only one grew before is a benefactor to his race, and every intelligent pomologist who devotes his energies to the production of new sorts and to the improvement of known kinds is not less to be regarded as having conferred substantial blessings on the world.

W. NEWTON.

Hillside, Newark-on-Trent.

RECENT PLANT PORTRAITS.

FRITILLARIA BUCARICA (Regel's "Gartenflora," plate 1171).—A rather pretty new Fritillary belonging to the section of the genus *Rhinopetalum*. It is indigenous to the Khannate of Buchara, and is found at elevations of from 4000 feet to 5000 feet above the sea level. It is apparently a rather strong growing species, bearing terminal cymes of medium-sized, pure white, round, cup-shaped flowers, slightly shaded pink on outside. This is altogether unlike any Fritillary known to me, except *F. Karelina*, figured in 105th volume of *Botanical Magazine*, tab. 6406, which it somewhat resembles, but is much less ornamental, though considerably taller in stature, its flowers being about half the size of the variety mentioned and much paler in colour.

EPIPHYLLUM RUSSELLIANUM VAR. **GAERTNERI** (Regel's "Gartenflora," plate 1172).—A very bright and ornamental and apparently most free-blooming member of the Cactus family, producing at the point of almost every leaflet a large, bright scarlet flower, with narrow and acutely-pointed petals, reminding one considerably of a single Cactus Dahlia, if such a flower exists.

HYDRANGEA PETIOLARIS (*Botanical Magazine*, plate 6788).—A fine double plate of this curious climbing Hydrangea, which is a native of the sub-alpine districts of Japan, extending into the island of Sachalin. It grows freely in a cool conservatory, but must be provided with a support, to which it clings with a number of air-roots, like an Ivy to a wall or tree. Its flower-head resembles that of *H. pubescens*, but the fertile blooms in the centre of cyme are of a much greener hue; the sterile flowers round the edge are pure white. It is also known under the names of *H. scandens* and *H. cordifolia*.

ALLIUM MACRANTHUM (*Botanical Magazine*, plate 6789).—A fine tall East Himalayan member of the Garlic family, which belongs to the group in which the rootstock is scarcely at all bulbous. It was first brought home by Mr. Elwes from the frontiers of Sikkim and Thibet. In habit of growth it exactly resembles the Leek, producing fine

large heads of fifty or more bright mauve-purple flowers on stout, upright stems, from 2 feet to 3 feet high.

SALVIA PANICULATA (*Botanical Magazine*, plate 6790).—A pretty Sage, which is a native of South Africa and resembles in habit of growth that of *S. tricolor*. It produces rather loose bunches of pale purplish lilac flowers. It was re-introduced from the Continent by Mr. Lynch, of Cambridge. It is also known under the synonyms of *S. chamælagnea* and *S. minor*.

DICHOTRICHUM TERNATEUM (*Botanical Magazine*, plate 6791).—This very handsome plant is a native of the Moluccas, and is a close ally of the beautiful genus *Æschynanthus*. It was introduced by Messrs. Jakob Makoy & Co., of Liège, who sent a specimen to Kew in 1882, where it was grown against a flat board in the Begonia house and bloomed in September of the following year. It is a tall, climbing undershrub, with soft, thick, herbaceous branches, all over softly pubescent; stem and branches rooting copiously into its supports. From these branches the long flowering peduncle depends, bearing a candelabra-like corymb of ascending flowers of a tubular shape and bright rosy scarlet colour. A strikingly beautiful plant.

PLECTRANTHUS FETIDUS (?) (*Botanical Magazine*, plate 6792).—This very striking plant is a native of the eastern parts of Tropical Australia, whence a specimen was first brought by Sir Joseph Banks. It is, however, an exceedingly rare plant. The specimen here figured was raised in the Edinburgh Botanic Garden, and was sent to Kew in 1883, where it flowered in the Palm house during the spring months, forming a conspicuous feature from the great length of its racemose flower-spikes with their snowy coat of wool enlivened by the beautiful cobalt-blue of the corolla. It is difficult to understand why it should have received the distinctive appellation of *fetidus*, as it has no smell whatever when fresh and is far from offensive when crushed.

W. E. G.

VITALITY OF BURIED SEEDS.

It is astonishing how long seeds of some indigenous plants retain their germinating powers when buried so deep in the earth as to be beyond the reach of atmospheric influences. Last spring we grubbed up a large bed of common old Rhododendrons, in order to replace them with new and better sorts. Previous to planting the latter, the peat soil, of which the bed was made, was turned over and thoroughly broken up, the bottom portion being brought to the surface. That bed is now covered with a thick crop of seedling Foxgloves, the seed of which must have been lying there in a state of complete dormancy for probably half a century. Rhododendrons do not flourish here in the natural soil. Therefore they are provided with peat brought from the adjacent Mendip Hills, where Foxgloves grow wild in rich profusion; the present crop of young plants, therefore, must have sprung from seed brought and buried in the peat when the beds were originally made. Another instance nearly as remarkable came under our notice a year or two ago, when, consequent on the deep cultivation of a long-neglected hardy flower border, the long-buried seeds of the Giant Mullein (locally called Aaron's Rod) germinated and grew in great abundance. This plant sows itself and grows freely on the top of a high old wall, where it looks stately, shooting up amidst the wall covering of Ivy. The seeds of Gorse, too, will, if deep underground, retain their vital properties for an indefinite length of time. I am acquainted with a piece of land in Northamptonshire which was converted from a Furze fox-cover to pasture, a state in which it remained for thirty years or more; it was then deeply cultivated, and the following season a crop of Gorse sprung up over the whole field. Doubtless equally interesting instances of long buried seeds germinating are numerous.

A. MOORE.

Cranmore.

Aubrietia deltoidea var. **olympica**.—Information is asked for (p. 432) respecting this plant. I am unable to trace the origin of the

name *olympica*; a form of *deltoidea*, however, is found near Mount Olympus, and from specimens which I have seen from there, I conclude this to be the plant. It is distinct from *A. purpurea*, which flowers in spring, while *A. olympica* commenced flowering a fortnight or more ago, and continues on through the winter. It seems to be partial to limestone, over which it scrambles freely, and growing thus it is seen to much better advantage than on flat ground. No amount of frost or hard weather seems to hurt it. It may be propagated either by cuttings or layers. It is at present scarce in cultivation, but is undoubtedly well worth attention.—K.

GARDEN FLORA.

PLATE 471.

BIGNONIAS.

(WITH A COLOURED FIGURE OF *B. CHERERE*.)

THE BIGNONIAS are mostly tall climbing shrubs, with flowers generally large and ornamental. The genus comprises about 120 species, all of which are natives of America; one only occurs in extra-tropical North America, several others in extra-tropical Brazil, all the others inhabiting the tropical regions. If all the plants that are called Bignonias in botanical as well as in gardening works were to be included, the number of species would be very largely increased beyond the figures just given. In this paper it is intended to deal only with true Bignonias, and only such of them as are of known horticultural worth. At the end a list is given of plants which in gardens are known as Bignonias, but which are members of other genera. Many of the un-introduced kinds are both beautiful and distinct enough to deserve bringing within reach of English horticulture. At present we possess hardly a dozen good sorts; these will be found enumerated and described below.

It would be difficult to find three more beautiful plants or more available subjects for indoor gardening than *B. Cherere*, *B. venusta*, and *B. speciosa*, while all the species here described are of first-class merit as flowering plants. It may be owing to their somewhat strong and large growing habit that comparatively little is done with Bignonias by cultivators at the present time. In very small houses it is hardly possible to afford these plants the treatment and space they require for their full growth and development. There are, however, thousands of large glass structures where Bignonias would be found to thrive and to afford a display of brilliant flower charms such as would astonish those—and they are numerous—whose houses are embellished only with the old stereotyped Passion Flower, Fuchsia, and such like. That this is no exaggeration will be seen by the following story: At the exhibition of plants and flowers held June 12, 1883, in the rooms of the Linnean Society at Burlington House in connection with the Horticultural Society, Captain Rogers, of River Hill, Sevenoaks, showed a basket of beautiful blooms of *B. Cherere*. Assembled at that meeting were the *élite* of metropolitan horticulture, and to them of course this basket of Bignonia blooms was an attraction. There was no name with the flowers, and no one present knew what they were. Many made guesses, but the fact remained that amongst that company of the leading spirits of horticulture there was not one to whom those Bignonia blooms were known. Someone suggested *B. grandiflora*. Finally, the flowers were sent to Kew for identification. It

* Drawn from flowers grown by Captain Rogers, River Hill, Sevenoaks, June 13, 1883.



BIGNONIA CHERERE.

was from a portion of these flowers that the accompanying plate was made. This proof of how little was known of a plant whose introduction to English gardens dates back some fifty years will show how easy it is for a beautiful, distinct, and eminently useful plant to fall into neglect and be forgotten. We learned from Capt. Rogers that his plant of *B. Cherere* was growing in a warm greenhouse, and that he had scores of immense heads of bloom from it every summer. To grow *Bignonia*s the most important points to be observed are, that they be planted out in beds of rich, loamy, well-drained soil, that they be freely watered both overhead and at the root during their most vigorous growing period, that water be withheld from them as soon as growth is about completed, and that the pruning knife be used as little as possible. The weaker lateral shoots are the flowering parts of these plants. From this it will be seen that success is easiest attained when the main shoots are encouraged to grow their full length, after which, by stopping them, lateral shoots are freely developed. As soon as the plants get old and scraggy, cut them down to within a few feet of the base, and as the new shoots push, train them up to form the principals or leaders from which the flowering branches are to be ultimately developed.

B. CAROLINÆ.—A greenhouse climber of rapid growth and graceful habit; leaves opposite, composed of a pair of slightly hairy, cordate, long pointed leaflets and a long, forked tendril; flowers in long terminal panicles, snow-white, except on the inner face of the tube, which is streaked with pale yellow; tube about $1\frac{1}{2}$ inches long, limb spreading. Of this species Dr. Lindley wrote: "All that we know of this charming plant is that it flowered with the Earl of Ilchester at Melbury in 1842, and that it again blossomed with his lordship in 1844." The flowers are produced in great abundance during the summer months, and are sweet scented, a character unusual with *Bignonia*s. Flowering plants were to be seen in the Palm house at Kew several years ago (*Botanical Register*, 30, tab. 54).

B. CAPREOLATA (the Cross Vine of North America).—A handsome climber for the cool greenhouse. Leaves conjugate, the pair of leaflets on each being cordate, oblong, smooth, shining green, tendril branching into several arms; flowers in axillary peduncles, which are produced several together from each node, each peduncle bearing a single flower, which is trumpet shaped, 2 inches long by $1\frac{1}{2}$ inches wide, with spreading lobes; colour deep red splashed with orange, especially on the corolla lobes. In the forests of the South-western States of North America this *Bignonia* is a frequent object, where, climbing over the loftiest trees, it forms immense curtains of luxuriant foliage and numerous brilliantly coloured flowers. The name Cross Vine refers to the wood of the stem, which on a transverse section presents the form of a cross. For its cultivation in this country a cool greenhouse temperature is sufficient, where, planted in a bed of rich loamy soil and encouraged to grow freely, it will make numerous long graceful branches, which if allowed to hang down have a handsome effect, even when not in flower. The blooms are produced in June or July, the plant lasting for about a month in flower. Pruning should be refrained from unless where necessary for the sake of light. During winter water should be withheld from the roots and a low temperature be maintained, so that a period of complete rest may be enjoyed by the plant. In some of the warmer parts of England this plant thrives out-of-doors when planted against a warm sunny wall. There are several varieties of this species known, the most distinct being *atrosanguinea*, which has longer leaflets, a dark purple corolla, and lobes shorter and more pointed than in the type. This variety, when in flower, is one of the most striking

of the climbers in the conservatory at Kew (*Botanical Magazine*, t. 864 and 6501).

B. CHEREERE (see accompanying plate).—A stout climber with long, wiry shoots, thinly clothed with binate, sometimes trinate, leaves; the leaflets are orbicular or distinctly heart-shaped, varying from this, their usual form, to that of oblong and pointed; the cirrus or tendril between the pairs of leaflets is 3-forked. The flowers are produced on the ends of the young ripened shoots; they are bell-shaped, with five broadish recurved segments, and are about 3 inches long. The plate herewith shows the character of the flowers better than any description could do. Generally the flowers of this species are produced about midsummer. When favourably situated and treated liberally, as many as from eighty to a hundred flowers are produced on the end of a single branch. There is a close resemblance between these flowers and those of some of the finest forms of *Tecoma radicans*; in fact, the flowers from which the accompanying plate was prepared were called *Bignonia grandiflora*, a name by which a large-flowered form of *Tecoma radicans* is known in gardens. An intermediate temperature, or at least that of a warm greenhouse, is preferable for this plant to a warmer or stove temperature; in the latter this *Bignonia* grows rampantly, but seldom flowers; whereas in a warm greenhouse it makes sturdier growth, and if rested for a short period during early spring by withholding water, seldom fails to bloom satisfactorily. *B. Cherere* is a native of the higher regions of Mexico. It is sometimes called *B. heterophylla* or *B. buccinatoria*. Cultivated in the Royal Horticultural Society's Gardens, at Chiswick, in 1834 (*Botanical Register*, 15, t. 1301).

B. MAGNIFICA.—A large-flowered stove climber, introduced by Mr. Bull from Colombia, and figured in his catalogue for 1879, from which the following description is taken. A free-growing and extremely floriferous stove plant, of scanty habit. The flowers, which are produced in large branching panicles, are of great size (about $3\frac{1}{2}$ inches across) and of an exceedingly attractive colour, ranging from delicate mauve to rich purple-crimson, relieved by a conspicuous throat of light primrose-colour.

B. PURPUREA.—A stove species with the habit and leaf characters of *B. speciosa*, which it also resembles in size and principal colours of its flowers. In the narrower corolla-tube and in the whiteness of the flowers internally we have, however, good characters by which this species is easily distinguished from *B. speciosa* (*Botanical Magazine*, t. 5800).

B. SPECIOSA.—A handsome summer-flowering species, and one of the best known. From the older stems numerous axillary shoots are produced, which hang down gracefully to a length of about a yard. The leaves are opposite, and are composed of a pair of rather broad, undulated, elliptical, shining green leaflets and a long simple tendril. The flowers are borne on the ends of these depending shoots, generally in pairs; they are large, the tube being about 3 inches long, broad mouthed, with blunt reflexed lobes, which are deep lilac with broad veins of purple, the tube itself being yellow and lilac. This species thrives equally well in both a stove and a warm greenhouse, flowering profusely whether the shoots are long or short. A native of Uruguay (*Botanical Magazine*, t. 3888). The figures in *Botanical Register*, 28, t. 45, and *Paxton's Magazine*, 10, t. 125, and which are called *B. picta*, represent *B. speciosa*. Syn., *B. Lindleyi*.

B. TWEDIANA.—A greenhouse species, with leaflets in pairs, lance-shaped, 3 inches long, and a short three-forked tendril which is hooked like a bird's claw. The flowers are trumpet-shaped, 2 inches long, and an inch wide at the mouth, with spreading lobes, the margins of which are ciliated. Colour of flowers orange-yellow shaded with green on outside of corolla-tube. Buenos Ayres (*Botanical Register*, 26, t. 45).

B. VENUSTA.—A stove species, flowering in winter. Stems extending often to a length of 30 feet or more. Leaves of the form usual in *Bignonia*;

leaflets deep green, smooth; flowers in large clusters on ends of lateral shoots; corolla 3 inches long, in form like that of Honeysuckle, but larger and more open at the throat; limb composed of five spreading reflexed segments; whole flower a brilliant orange-vermilion, with a narrow marginal line of yellow round the corolla lobes. The strongest shoots of this plant often bear heads of flowers numbering several hundreds. In the gardens of Mr. H. T. Hope, Dorking, Surrey, this magnificent climber used to thrive very satisfactorily "twined along a simple spar of wood near the back of the stove, within a foot of the roof, the main stems extending to a length of between 30 feet and 40 feet. From these there were probably about 300 lateral branches of different lengths, depending at pretty regular intervals, at the extremities of which clusters of flowers displayed their truly golden glories, and created a scene beyond measure enchanting." Although this plant had been in bloom nearly a month when the above was written, it had still in bud hundreds more of flowers. This was in the month of October. The year previous this plant had been cut back to within 3 feet of the base, so that all the growth and the marvellous crop of bloom were the produce of a single year's good cultivation. It was planted in a bed of loamy soil. About half-a-dozen years ago this *Bignonia* was a most attractive picture in the Palm house at Kew. An alteration in the heating arrangements for this house with a view to obtaining a more distinctly tropical temperature for the Palms proved fatal to the *Bignonia*. At Syon House there is a fine old plant of it in one of the large warm houses, and from this a bunch of gorgeous bloom annually appears at the horticultural meetings at South Kensington. Usually *B. venusta* flowers from October to December. A native of Rio Janeiro, where, along with *Bougainvillea spectabilis*, it forms a common ornament upon the trees and houses of that town. A figure of this species will be found in THE GARDEN, plate 333.

B. PICTA.—The flowers of this plant are unknown; it is cultivated for the sake of its green and yellow mottled foliage. It is apparently a true *Bignonia*—so far, at least, as can be determined in the absence of flowers. Introduced from Brazil by M. Verschaffelt in 1866 (*Illustration Horticole*, 1866, 560).

B. ARGYRO-VIOLACEA is a second ornamental-leaved kind of unknown floral character, but pretty enough in its purple young leaves, the nerves of which are banded with grey. Probably a variety of *B. unguis* (*Illustration Horticole*, 1866, 469).

The following list comprises those garden plants which are generally called *Bignonia*s, but which really belong to other genera:—

<i>B. æquinoctialis</i>	=	<i>Anemopagma racemosum</i>
<i>B. Chamberlayni</i>	=	"
<i>B. Colei</i>	=	<i>Colea mauritiana</i>
<i>B. grandiflora</i>	=	<i>Tecoma radicans</i> var.
<i>B. Pandorea</i>	=	" <i>australis</i>
<i>B. radicans</i>	=	" <i>radicans</i>
<i>B. Sambucina</i>	=	" sp.
<i>B. stans</i>	=	" <i>stans</i>
<i>B. Telfairiæ</i>	=	<i>Colea</i> sp.
<i>B. uncata</i>	=	<i>Macfadyena uncinata</i>

B.

Large standard Rhododendrons.—I was induced the other day to measure a few standard *Rhododendrons* planted about thirty-five years ago at Lanhydrock, Cornwall. They are scarlet and crimson varieties, and the dimensions of the largest I found to be as follows: Height of stem 5 feet, circumference of stem 2 feet 9 inches, depth of head 10 feet, circumference of head 48 feet. Some of the others, too, are nearly as large; they have long ago pushed away into the rather poor loam of the locality, yet they still retain their freshness and vigour, are annually covered with bloom, and need only to be seen to be admired. More beautiful objects than standard *Rhododendrons*, whether as single specimens on a lawn or planted by the side of carriage drives, could scarcely be named; the dimensions of

other large specimens would at least be interesting, together with any remarks that it may be deemed necessary to make regarding durability of character or conditions of growth.—J. H., *Lanhydrock*.

SEASONABLE WORK.

FLORAL DECORATIONS.

WHERE a considerable amount of dinner-table decoration has to be done, a good supply of Ferns and Selaginellas should be kept up in small pots. Of the former, *Adiantum cuneatum*, *Pteris serrulata*, and its crested variety will be found serviceable. Of the Selaginellas, *S. denticulata* (Kraussiana) and its different forms are the best. Where such as these are grown, a considerable change may be made in the mode of grouping and arrangement, in order to give variety and avoid monotony. A good central group may be made in the following manner: If proper receptacles are not at hand, a thick oval layer of brown paper on the cloth will answer, or perhaps, what would be better, a large oval dish, with a slight layer of Moss on the bottom. For the outer edge select somewhat bold foliage, such as that of the variegated forms of *Begonias* or *Adiantum farleyense*. If *Calanthe vestita* can be had with well-developed spikes, select four or five plants of it, turn them out of their pots, and arrange them on the Moss. Then, if Ferns are at disposal, they should be likewise used in sufficient numbers to make a good groundwork to the whole. Neither the *Calanthes* nor Ferns will be injured, provided they are well looked to afterwards, and they will produce sufficient variety without any additions thereto, unless it be one or more of the spikes of *Calanthe Veitchi* to furnish colour. Still keeping to the same base as a commencement, a fringe of rather bolder forms of Fern foliage may be first arranged; then fill up the central part with small Ferns, &c., as aforementioned, adding thereto one plant of *Cyperus alternifolius* as a centre. Then insert a few spikes of *Eucharis*, or one or two each of Roman Hyacinths or Paper-white Narcissus, using as a contrast thereto some sprays of *Euphorbia jacquiniiflora*, or two or three rather small bracts of *Poinsettia*. For sideboard decoration the Japanese forms of *Chrysanthemum* make a bright and effective display, two or three colours being sufficient for one vase. We think these look best when arranged by themselves, as do also the large-flowered incurved varieties. As these will all soon be over, it will be advisable to make the most of them while they last.

INDOOR PLANTS.

VIOLETS.—Where a continuous supply of these is wanted through the winter, the stock for the purpose requires to be treated in different ways. During the present autumn Violets have bloomed out-of-doors freer than usual, and so far have saved the necessity of bringing them on by other means. Where plenty of leaves are at hand, so as to make up beds that will give a little heat to stimulate root action and to throw off enough top warmth to keep the frames placed over the plants at a genial temperature, there are few better devices by which these sweet-scented flowers can be had, as under such conditions they usually succeed well. Beds of this description must not, however, be made too warm; if too great a body of leaves is used, they sometimes become over-hot. They should be put together at intervals, putting on a few inches of soil, upon which set the plants, which ought to be taken up with good balls, having as many of their roots intact as possible: place them as close as the clumps will stand, and fill in the interstices with a little loose soil, after which water moderately, and give air daily proportionate with the warmth in the bed and the condition of the weather. It is an advantage to treat them in this way, so as to draw out the flower-stalks a little, which makes them more manageable in arranging, but if kept too warm or over-much confined, the stems become too weak to support the flowers without drooping when exposed.

WINTER FLOWERING EPACRIS.—The earliest blooming varieties of these are frequently kept a little warmer in autumn than ordinary greenhouse stock, the result being that they flower earlier, but the warmth also has the effect of exciting growth; and if after they have done flowering they are submitted to cooler treatment, they, like the Heaths, are liable to die off. In fact, it may be taken as a rule that any plant, however hardy it may naturally be, that has its growth started in the autumn or winter should afterwards be kept on moving gradually, or the check will be such as to induce ill health. As soon as the flowering is over shorten all the shoots well in, and if possible keep the plants in a temperature similar to that which has induced them to grow. So managed, the progress they will make for the next two months will be little, but the check that so often destroys them will be avoided.

CHRYSANTHEMUMS.—Cuttings of these may either be put in about this time or in February or March; in the former case they should be put in pots or pans, kept moist, and as close as they will bear without causing the leaves to damp by covering with hand or propagating glasses, but at the same time they should not be kept warmer than the temperature of an ordinary greenhouse. In this way they root slowly without the tops getting at all drawn, and as soon as struck they should be placed near the glass and have plenty of air, moving them singly into small pots about the beginning of March. These early propagated plants produce larger blooms where severe thinning is practised, and also a greater number of flowers where the plants are grown for ordinary decoration than those struck later. In all cases see that the cuttings consist of short, stout shoots, and not those that have been drawn up through the plants being crowded together whilst in bloom; where the cuttings are produced under the latter condition the plants are never so strong as they should be, and it is impossible to keep their lower leaves fresh on them through the summer. After the general stock has done blooming, all not required to furnish cuttings may be discarded, or they can be planted against walls or anywhere where there is a chance of their flowering out-of-doors.

LAPAGERIAS.—Plants of these done flowering, if at all affected with scale or thrips, should be syringed freely with insecticide strong enough to kill the insects now when little or no tender growth is present, sponging the leaves and stems afterwards, so as to remove any eggs that may remain. Both the red and white varieties are best increased by layering a few of the strong mature shoots, which, when so treated, produce through the spring suckers that in the course of the season can be taken off and potted singly. Supposing the plants to be planted out, the mode of procedure is to get some loose peaty soil to which has been added a little sand and leaf-mould. This should be laid about 4 inches deep on a portion of the surface of the bed in which they are already growing, and in this layer the shoots, covering them with the soil, so that the whole of the stems are buried and about one-half of the lower portion of each leaf, leaving the opposite end above the surface. The shoots must be pegged down with hooked sticks to hold them in their position. Keep the soil moderately moist, and when the young growths make their appearance above ground each should have a stick stuck in the soil to support it.

SALVIAS.—Those who grow a sufficient stock of the free-blooming *S. Bethelli* and *S. Pitcheri* will find them amongst the best plants for associating with *Chrysanthemums*, suitable alike for general decoration and for cutting, for either of which purposes they will last longer than most flowers. If to succeed these some of the later flowering varieties, such as *S. gesneriflora*, are grown, a good display may be kept up for a considerable time in the new year, but the plants of these late blooming sorts must not be kept too cold, or they will get stagnated in a way that will much interfere with their flowering. The opposite extreme must likewise be avoided, or they

will come in too soon. A temperature of 40° at night will answer with the latest of the stock, and if the pots are very full of roots a little manure water should be given every week.

SARRACENIAS.—These are extremely liable to the attacks of brown scale and thrips. The latter are almost sure to make their appearance every summer, secreting themselves under the recurved mouth of the pitchers, and unless means are taken to destroy them as soon as discovered, they injure the pitchers so much as to cause their premature decay, and even when the mature insects are killed there usually remains a number of eggs ready to start into life as soon as returning warmth brings them on. To exterminate these all the pitchers should now be carefully sponged with strong Tobacco water, and in like manner wherever scale exists an effort should be made to completely eradicate it, for so exceptionally fast does it breed on the young growths of these plants, that they are all but sure to get disfigured through the operations they are necessarily subjected to in removing it when the pitchers are soft and immature.

FLOWER GARDEN.

A GENERAL survey should now be made to see what improvement can be effected in the way of flower beds, as this and other alterations that it may be desirable to carry out can now be accomplished with speed and comfort; and not only these, but deciduous trees and shrubs transplanted before the new year has far advanced stand a better chance of succeeding than is possible for them if their removal is deferred until the spring. Any, however, of large size had better be left till next autumn, and to prepare them for lifting then they should have a trench opened around them now in order that their roots may be cut, when by filling in the trench again with light sandy soil the cut roots will form fresh fibres, which will be a great help towards rendering their future removal safe, and will assist materially in getting them quickly established. In the transplanting of trees and shrubs, the great point is to secure as many roots as possible, and to preserve each and all from injury. Another thing that militates greatly against the

SUCCESSFUL LIFTING and transplanting of trees is leaving their roots exposed, through which they become dry and shrivelled, and not only do they get in this unsatisfactory state, but the bark of the stems and branches contracts, and when allowed to get in that condition it is long before the sap vessels come into proper working order again. To prevent this shrivelling it is a good plan, if the trees moved be large, to bind their main stems and branches with Moss, large flaky pieces of which may be quickly tied on; the whole surface is thus enveloped by a covering which will preserve plenty of moisture and keep the bark plump. Where beds are to be turfed over it is a very important matter that they be well rammed, for if this is not done there is sure to be a gradual subsidence of the earth, and this sinking soon causes unsightly hollows that cannot be rectified till the autumn. As the soil of beds is generally richer than that on which Grass has been growing, it is always advisable when carrying out alterations to remove a portion of the surface and replace it with soil of a poorer character, or the lawn will prove patchy for years. In the selection of turf the best is that near paths where it has been subjected to a good deal of traffic, which makes it come finer, and gives it altogether an improved texture and quality. The handiest sized turves for laying quickly and handling easily are those which are about 2 feet long by 9 inches or 10 inches wide, and 1 inch to 1½ inches thick, as, so long as they will hold together, the thinner they are the better they will roll and unroll, and the more speedily can they be beaten down level in their places. The beating down should first of all be done during a dry time, and then immediately after rain, and if the roller is afterwards passed over, a firm level surface will be the result.

HERBACEOUS PLANTS are seen to the best advantage in wide shrubby borders with low evergreens to back them up, but these latter ought not to be of a kind whose roots spread widely, or they rob the plants and so spoil their growth. Rhododendrons, Berberis Darwini, B. stenophylla, and such like do not do this, and therefore should be largely made use of, as they are not only valuable on this account, but they are more desirable than most others on account of their moderate habit of growth and the great beauty of their flowers, which they bear so profusely in spring. For variety of foliage, Aucubas, Euonymus, and Hollies are the most suitable, and to these may be added the variegated Dogwood and Acer fraxinifolium, and by way of contrast to these, one or two of the dark-coloured Nut, which, with its rich coppery leaves, shows up well. As most herbaceous plants are fond of rich soil, the opportunity afforded when making a new border of giving a good dressing of manure should not be lost. The kind of manure most suitable for the purpose is that of a mild nature and which has been lying by for some time to get well decomposed. Such as this is agreeable to most plants, and may be used freely, but it is always best to keep it low down.

FRUIT.

PINES.—Endeavour to maintain a bottom heat of 90° and a minimum top heat of 70°, with a rise of 10° by day in the fruiting pit. Look over the plants at least once a week, and water well with warm diluted liquid or guano water when feeding is considered necessary. Dew the plants over with a fine syringe on clear, mild days, and moisten every part of the house with weak liquid when the house is closed for the day. If the fruit is to be kept for any length of time after it is ripe remove the plants bodily, or cut the Pines and remove them to a dry, warm atmosphere as soon as they begin to change colour. From this date the latter course is perhaps the best, as the suckers left on the old stools will gain strength and be in the best possible state for potting in February. Where a batch of promising Queens were selected last month and plunged in a bottom heat of 90° in a light house they will soon show to an experienced eye whether they are likely to throw up fruit without making a growth, and when this point has been determined more water may be given to the roots; but great care will be needed, as the best of plants may soon be spoiled by overwatering in winter. Keep a moist growing atmosphere by damping all available surfaces, but defer overhead syringing for the present. Plants now resting, and from which a growth may be expected before they show fruit, must be kept cool and dry until the commencement of the new year, when the treatment recommended for the earliest batch may be applied. In succession and sucker pits a general reduction in top and bottom heats may now be made. When fire heat is needed a minimum of 56° to 60°, with a rise of 10° by day, will be sufficient. The bottom heat should not sink below 75°, neither should it be allowed to rise above 80°. Pay particular attention to watering, as plants in small pots placed over hot-water pipes soon become dry, and a check produced by the want of water is very likely to cause them to start prematurely when more heat is applied in the spring. Where fermenting leaves or tan are used for supplying bottom heat there is less danger of the plants becoming dust-dry, but these should be regularly examined and watered before that stage is reached. Strong rooted suckers that were potted into fruiting pots late in the autumn should be kept near the glass, in a light span-roofed house where they can have sufficient top and bottom heat to keep them progressing through the winter.

FIGS.—Although we have not as yet done more than warm the pipes in our early Fig house on fine mornings, the application of warm water to the roots, aided by fermenting material, has set the sap in motion, and the young Figs are beginning to swell. The trees are now regularly syringed twice a day, and the temperature is allowed to range from 50° on cold nights to 65° by

day. When the terminal buds get a little more advanced the night temperature will be raised to 56°, and as this will necessitate more fire-heat, the daily syringing and watering will be proportionately increased. When young trees in small pots are forced, the most important operation is the supply of water to the roots, as one mistake in this part of the daily routine is almost sure to prove fatal to the most forward, and, as a matter of course, the most valuable portion of the crop. If plunged or placed on a bed of fermenting leaves the latter should be well worked before they are taken into the pit.

CHERRIES.—The early house from which ripe fruit is to be gathered in May should be closed about this time, and pot trees which have been standing in the open air may be cleansed, top-dressed, and placed upon shelves or borders where they will not be shaded by the permanent trees. The old May Duke and Black Circassian are excellent kinds for growing in pots, as they come in early, and being portable they can be removed to the open air as soon as the fruit is gathered, when the Bigarreau, Elton, and other late varieties trained under the roof can have the house entirely to themselves. All preliminaries having been completed, the starting of Cherries is a very simple affair, the main point being the maintenance of a low temperature with plenty of air, say 40° at night when artificial heat is needed, and 45° to 50° when external conditions are favourable. If old trees thickly set with blossom buds have been heavily taxed, top-dress with good rotten manure at once; defer this operation where they are young and make vigorous growth. Keep the borders in a healthy growing state by the judicious application of tepid water, and syringe with the same twice every fine day. When from artificial heat or mildness of the season the temperature rises to 55° ventilate freely.

VINES.—By this time the buds in the early house will be sufficiently forward to admit of a slight advance in the day temperature, but no alteration must be made by night until we have a change to more ordinary forcing weather. Follow up the daily syringing until the bunches are well advanced and all the buds are fairly on the move, but avoid constant saturation of the spurs at this dead season, as too much moisture often induces weak, elongated growths and loose, straggling bunches which rarely set properly or colour well, while a light, buoyant atmosphere with a gentle circulation of air and moisture in moderation lead to the development of stout leathery foliage capable of laying up plenty of colouring matter so essential to the perfect finish of early forced Grapes. If the inside borders have not been watered since the house was closed, another nice watering with diluted liquid at the maximum temperature of the house may be given, and the borders may be well mulched with fresh short horse manure, which will exhale ammonia when gleams of sunshine raise the temperature of the house. External borders hitherto covered with Ferns, litter, sheets, or shutters may now advantageously receive a good covering of moderately dry fermenting leaves, which will set the surface roots in action and draw them into the autumn surfacing of turf and bones ready for the performance of their work when the stoning and colouring processes draw so heavily upon the Vines.

LATE VINERIES.—Muscats, Alicantes, and other thin-skinned Grapes will now require cutting, as they will keep better in the Grape room than on the Vines. When the latter are cleared, get them pruned and cleansed; dress the cuts with styptic, and throw the ventilators open in suitable weather to give them a month's rest before growth is again excited. If the internal borders are not satisfactory, immediately after the Grapes are cut is the time, and the only time to get them put right. Years ago many people were afraid of disturbing the roots of Vines, but it is now well known that external or internal borders may be taken out alternately, and every particle of the old soil may be replaced with new, not only without endangering the succeeding crop, but with the certainty

that it will be greatly improved. Lady Downes, Mrs. Pince, and that excellent Grape, Black Morrocco, are keeping unusually well, but they had a liberal share of fire-heat early in the spring, and they will hang for any reasonable length of time without shrivelling. If the Vines are not already clear of foliage, all the leaves will be ripe enough for removal, and the Grapes will be in a fit condition for cutting and bottling by the end of the month. When cutting Grapes for keeping, always remove every doubtful berry, as the smallest spot is sure to end in decay. Choose a bright dry day for bottling; never cut away any of the wood beyond the bunch without applying styptic, and avoid disturbance of the berries in the removal of the bunches to the Grape room. Growers who have Mrs. Pearson hanging in late houses will do well to give it a fair trial, as it promises to be a good keeping Grape, and the quality being so excellent it cannot be too soon or too well known that we have at last a worthy companion to the invaluable, but often badly treated, Lady Downes.

PEACHES AND NECTARINES.—With a hazy kind of atmosphere, through which the sun cannot penetrate, the forcing of an excitable tree like the Peach must be carried on with great care and patience. In mild weather the temperature best suited to this valuable fruit (45° at night and 55° by day) can be maintained almost without fire-heat, but under colder conditions 5° lower will be safer figures to work upon until brighter days set in and the flower-buds get well advanced, and show by their plump, robust appearance that the most critical stage in forcing has been safely tided over. In proportion to the diminution in the day temperature let syringing be reduced, as too much moisture is apt to injure the buds, but keep the atmosphere in a nice growing state by damping the pipes and borders, and by turning the fermenting material at short intervals. If plants of any kind occupy the early house, see that they are kept clear of the trees, and fumigate as often as may be needful to secure freedom from aphid during the flowering period. Ventilate the house on all favourable occasions, and, if possible, leave a chink of air on all night, but avoid draughts of cold, frosty air, particularly when the blossoms begin to unfold and the wood buds burst into growth. Many people think it is quite unnecessary to ventilate a Peach house until the trees get into growth, but when it is borne in mind that a modern house is hermetically sealed, and that many Peach trees are ruined by being kept in too high a temperature, the importance of now doing for ourselves what the old generation of glaziers so thoroughly performed for us must no longer be overlooked or neglected.

PEACHES IN POTS.—Where the number of permanently planted Peach houses is limited, and the earliest is, perhaps, planted with the good old sorts which are beaten in point of time of ripening by modern varieties, but still hold their own with something to spare in quality, it is a good plan to take the first crop from pot trees plunged in or placed over fermenting material in light, efficiently-ventilated, span-roofed houses. To ensure success, take kinds like Amsden's June, Alexander, Hale's Early, Early Grosse Mignonne, and A Bec, which ripen in the order named; Lord Napier and Advance Nectarines should be potted up and grown into fruiting trees under glass before they are taken in for forcing. In many places there are houses well adapted for this kind of work, as the trees need not be large, and this being a suitable time for getting maidens or cut-backs, preparation may still be made for having a good stock of suitable trees for next year's forcing. Of the two we prefer the compact maidens with plenty of side shoots from the union of the bud upwards, and as Peaches are not improved by being cut back, all that is needed is firm potting in 10-inch pots and pruning back all the side shoots to a single bud when they begin to break into growth in the spring. It is hardly necessary for us to say the house in which these trees are prepared should be moderately heated, as the pots should be full of roots and the wood thoroughly ripe by the end of July. If the side shelves or pits are too low for

Peaches, Figs in the bush form will do well for a great number of years.

HARDY FRUIT.—The mild, damp weather which has been so favourable for pruning and nailing will have held out inducements to many to postpone such work as top-dressing and mulching until walks and borders are in a better state for wheeling manure and compost; but so important an operation must not be longer neglected, as the timely application of a good covering to newly-planted or root-pruned trees cannot be over-rated. Where Pears are grown on the Quince stock and the roots have not been disturbed, the annual top-dressing of good rich manure may be wheeled out on frosty mornings as soon as the nailing is finished. It is well known that the successful culture of Pears on the Quince stock greatly depends upon rich top-dressings, and as the borders in course of time become too high, old top-dressing and exhausted soil may be forked off and placed on the vegetable quarters to make room for the new. After a few years heavy cropping puts an end to extension; blossom-buds only are formed, and as many people are quite incompetent to thin their own fruit, the annual removal of old spurs at pruning time should not be neglected. Push on the pruning and cleaning of all kinds of fruit trees, as the time may be at hand when men cannot stand for hours at a stretch against cold brick walls. Unfortunately, the winter dressing of hardy trees is much neglected; many troublesome insects are allowed to rest in the bark and in the walls, from which they almost precede the unfolding of the earliest buds in spring.

KITCHEN GARDEN.

DURING the past few weeks Broccoli, Lettuces, Endive, and Borecole have grown rapidly, and should severe weather set in suddenly, it will be much more disastrous than if it had been colder and more seasonable. Young Cauliflowers for spring planting, and likewise Lettuces in frames, have become somewhat tender through making such rapid growth. Therefore care must be taken not to expose them to too much frost when it arrives. A few degrees will, however, in no wise harm them. Large plants of Lettuce and Endive should be got into frames or into a cool house. When the plants become thoroughly dry, a few should occasionally be tied up to keep up a succession of good blanched salad. Any of the late Cauliflowers now just turning in should be lifted and placed in a frame or shed where they will be partially protected from frost. The heads of late Cauliflowers thus treated will not be large, but will be very acceptable next month. If early Broccoli, just beginning to button, be lifted now and placed under glass where a little heat can be given in frosty weather, and likewise abundance of air when necessary, they will produce some fair-sized heads, and may be useful should those out-of-doors be destroyed by frost. A deep frame is the best place for them. Plunge them in 6 inches or 8 inches of good light rich soil, and allow the foliage to lie close to the glass. The largest of the winter Turnips should be lifted and stored in a pit out of doors, similar to Potatoes, where they will keep much firmer than if stored in a cellar or shed. This is a good time for breaking up old plantations of Seakale or Rhubarb. From the former should be selected the largest and strongest for forcing, reserving the small ones and all the roots for making cuttings for planting out in spring. Rhubarb may now be divided and fresh plantations made; each piece should have a good crown. Some roots may be forced in the open ground by the use of pots and manure, or placed in a frame or Mushroom house, according to circumstance.

Early Peas.—I notice it stated that a certain new Pea to be sent out this year was fit to pick last season ten days before Day's Early Sunrise; but surely there is nothing very remarkable in that, seeing that Day's Early Sunrise is quite that much later than Ringleader. The fact is that in point of earliness we have not gained a single day in the case of any of the new introductions for these last thirty years.—J. C. C.

WORK DONE IN WEEK ENDING DEC. 16, 1884.

DECEMBER 10.

SURFACE-GRAVELLED part of pleasure ground walks. This work we always like to do immediately after there has been sufficient rain to soak the old gravel, then there is no difficulty to get the new gravel firm at once. The heavy rain of yesterday has therefore proved of great benefit to us in this respect. Of course, the turf edgings, verges, were cut prior to the new gravel being put on. More leaf clearing up and carting away done, other jobs being the continuation of pruning and nailing. Apples (bush trees) and Apricots are the kinds that were in hand to-day. The latter are pruned on what I shall call a modification of spur pruning—that is, young shoots that start near the base of the tree, and that seem likely to make good growth, are laid in each season till they are of the desired length, at which time they are made to take the place of branches on which the spurs are getting long, and consequently that much the more out of the line of protection that the wall coping affords. Some varieties bear very well for many years on the old spurs, others not for more than four or five years; the latter is about the average age that spurred-in branches may profitably be retained. Soon as nailed, both walls and trees will have a thorough drenching with soapsuds. It is rarely that Apricots are attacked with insects; soft brown scale sometimes gets on them, but a good winter dressing with soapsuds and a small proportion of Gishurst dissolved with it is a sure preventive. Tied late Peach trees to trellis. Turned over fermenting material in early vinery, and stood on the bed sundry plants for forcing, such as Spiræas, Deutzias, Lily of the Valley, and the varieties of Chrysanthemums that are shy in producing cuttings, in hope of getting shoots to start from the base.

DECEMBER 11.

The weather was fine till noon, and then we had a regular downpour for the rest of the day. Making new walk, laying down turf verges, and also planted a few *Retinosporas* and *Cupressus* on lawn. Our soil is naturally suited for these classes of plants, being a sandy loam inclining to peat, but as it is poor in the extreme, we trench deeply, and into the bargain give each tree a couple of layers of good manure, and it is seldom we have a plant fail. All hands were this afternoon employed at the usual wet-day jobs, seed Potatoes being laid out in single file, and those for use picked over. A few more sets of Myatt's Ashleaf were put in boxes of leaf-soil, and placed in vinery to sprout preparatory to being planted in frames. Pot-washing, making labels and pegs, trimming up stakes, picking the husks off Filberts, and spreading out Chestnuts on fruit shelves; mildew and sprouting had set in, owing to their having been laid too thickly together. Grapes were also looked over to cut out every trace of decay, and the Grape room had the heat turned full on for a couple of hours, the door and ventilators being wide open the while. In muggy, damp weather, such as to-day has been, damp penetrates the driest room, and never do we turn the heat on the Grape room till walls and floor really seem wet. Early Muscat vinery border (inside) had another good watering with tepid water; for the present the minimum night temperature will be 55° and the highest day (without sun) 65°. I fancy Vines generally will break much more easily and earlier this next forcing season than for some years past, owing to their being so well ripened; and if my surmise prove correct, it will perhaps be necessary to force very gently after they have broken, that is supposing the Grapes are required to be in their prime at a given date. On the other hand, Vines that have not hitherto been forced very early, and yet are required early, the present will be a good season to make the trial.

DECEMBER 12.

Pruning and nailing Apricots, more turf laying, and cutting Grass verges prior to surface-gravelled walks; uneven parts of verges are, of course, made even, either by beating or rolling before the

edgings are cut; finished carting leaves from pleasure grounds and started shrub pruning, the straggling shoots of *Rhododendrons* growing under the shade of trees being the first to be cut away. Pruned another vinery—the sorts are *Hamburgh*, *Alicante*, *Gros Colmar*, *Mrs. Pearson*, and *Golden Queen*. The remainder of the fruit has been put in bottles. When harvesting Grapes at this late period, that is, at the time when the Vines are ready to prune, we cut them with all the length of wood possible; first, because there is then no difficulty as to the stems being of sufficient length to be an inch or two in the water; second, the bunches hang quite free of bottles and racks; and third, the greater the amount of wood both below and in front of the bunch, that much the longer does the fruit retain its plumpness; and another very marked result of the retention of the wood in front of the bunch is that the berries do not crack when first they are put in the bottles. This fact was brought home to me very forcibly some years ago, when, for the sake of neatness, the wood in front of the bunch was cut quite away, and within a week the penalty paid for my folly was the loss by cracking of a quantity of fruit. Ever since then, in this particular, neatness has had to play second fiddle, for there has been no cutting away of wood and very little cracking. *Gros Colmar* is not a good keeper by the bottle plan, and in our case will certainly be worse than usual this year, simply because they are not well ripened. The Vines were last year partially lifted and root-pruned with severity, and this, I think, is the reason of their being so unsatisfactory. *Mrs. Pearson* was served exactly the same, but the results are reversed. This is a grand Grape, being of good constitution, a free bearer, handsome, and delicious in flavour, being closely allied in this last respect to *Chasselas Musqué*. Put in cuttings of *Pelargoniums* and a few more *Chrysanthemums*, and placed in the forcing pit another lot of Strawberries.

DECEMBER 13.

Our work to-day has principally been the clearing up of coach roads, weeding and rolling walks in kitchen garden and frame ground, cleaning up prunings of fruit trees, and pulling up the old stumps of the earliest Broccoli, the decayed leaves from Cabbages; in short, the making of the kitchen and fruit garden look as neat as the time of year admits of. Indoors, *Primulas* and *Pelargoniums* were picked over and turned about to make them look their best, bedding plants being also looked over with the same intent. *Echeverias* and other succulents in frames were weeded, and such as needed it watered; they require very little indeed; once a week at most is all the watering necessary. *Bouvardias* and *Poinsettias* are now taking the place of *Chrysanthemums*, and to make the most of them they have been dotted here and there about the houses, with Ferns as a setting. *Bouvardia President Garfield* is a pink form of the double white *Alfred Neuner*, and is certainly a great acquisition for bouquet and button-hole work. Put a few Roses in early Peach house to force. Tree Carnations are also in this house, not having a better place for them; syringing has to be done carefully to avoid wetting the flowers. Picked all leaves from Lady Downes Vines; they came away without the least force, otherwise they would have been left. The fruit keeps its colour well, being quite a blue-black. Three or four years ago the Grapes turned very red after being perfectly coloured, and the same undesirable change took place till last year, when, though they did slightly change, it was hardly perceptible; and this year, as before observed, they retain their perfect finish. And why? Because we discontinued the use of guano last year, and this year the Vines have got entirely quit of it.

DECEMBER 15.

Preparing ground for planting shrubs, amongst them being Yews, *Cupressus*, *Retinosporas*, and *Thuopsis*; leaf soil and well rotted stable manure are added to the natural soil (sandy loam) for all of them; and in planting, each one is well trodden down, and at once secured to stakes, and

mulched with long litter. Other outdoor work has been the same as for several days past, namely, cutting and laying down turf, where alterations are being made in the pleasure grounds, and pruning and nailing fruit trees. Sowed first Melons; preference is given to sowing them singly in small pots that are only half filled with soil, a plan that admits of earthing up with small pieces of fibrous turf as growth is made. They are for the present plunged in a Pine pit having a bottom heat ranging from 75° to 80°. Added a little fresh stable litter to bed of leaves in early vinery to renew the heat, and also put a little more on outside border, the rain having beaten down so flat, that there seemed barely sufficient bulk to prevent penetration of frost. Put Vine eyes in pans of sand and stood them in a cold pit.

for their annual painting over with soft soap and Gishurst, and this will be done at once, so that we may arrange bedding plants under the Vines, and this will give room to some that are overcrowded in other houses. By way of saving firing, and also to keep the plants stocky, Pine pits are now covered at night with thick canvas. An undue amount of firing at this dull season is sure to cause a flabby and drawn growth.

HANTS.

FLOWER GARDEN.

DAISY CHRYSANTHEMUMS.

A WELL-KNOWN Chrysanthemum grower in Jersey wrote to me last year as follows: "Some years ago I tried the Chrysanthemum seeds advertised

Mr. Cannell and other nurserymen are now quite alive as to their value in the market, and I notice that Mr. Boyce, of Holloway, makes quite a foremost feature of these Daisy-flowered kinds in his catalogue. Some of these new single-flowered varieties are naturally dwarf and bushy, and produce their elegant blossoms in clusters most profusely. As a class, single Chrysanthemums deserve a place in the schedules of our Chrysanthemum societies, and at least two classes might be reserved for them—one for flowers to be shown in trusses as cut from the plant (say three trusses of each variety), and the other for specimen plants as naturally grown for decorative uses.

Our illustration shows a pure white variety, having a yellow disc or centre. It was raised by Mr. Forbes, Buccleuch Nurseries, Hawick, and is named White Daisy, being, as we think, quite a little beauty in its way. It is very curious to read the criticisms bestowed on this section of Chrysanthemum by the florists of a bygone time. "They are pretty! Oh, yes; some of them will do for decorative purposes, but they cannot last long; the fashion will soon die out." Even "R. D." (p. 471) does not think "there is a future before them," although he says, "The interest created in these single Chrysanthemums may perhaps have a tendency to encourage the production of seedlings in this country, not, of course, from English-saved seed, but from seed obtained from the Continent or the Channel Islands." The popularity of the Chrysanthemum is now so great and widely diffused, that the raising of seedlings is sure to be practised; and the saving of seed in English gardens is not quite such a forlorn hope as "R. D." seems to imagine. We have only to look into the history of the Chrysanthemum to find out the fact that seed has been saved again and again in English gardens; indeed, it is by no means improbable that the first Chrysanthemum seed ever saved in Europe was that from which Mr. Isaac Wheeler, of Oxford, raised his seedling varieties (as long ago as 1830), to which the Horticultural Society of London awarded a silver Banksian medal. Two other growers at least, namely, Mr. Short and Mr. Freestone, raised seedlings in Norfolk a few years later, and in more recent times (1865) we have Dr. Sharp and Mrs. Sharp raised by Mr. Harding, at Tunbridge Wells, from seven seeds only obtained from Madame Poggi, and I believe I am right in saying that Mr. A. Forsyth saved seed when at Stoke Newington.

The raiser of the first seedling Chrysanthemums in the Channel Islands was a baker, the plants being trained to a wall behind his oven. A common plan of seed-saving in the Channel Islands is to train the plants to a sunny wall, protecting them from wet above by a weather board. Here they are left to ripen until the end of January, when the old flower-heads are cut off, and the seed separated and saved by being rubbed in silver sand. Surely, what is so simple to cultivators in Guernsey and Jersey in the open air may be accomplished in a sunny greenhouse in England. What has already been done in this way can be repeated, and personally I am convinced that in the garden nothing is impossible. There is a tradition that the late Mr. Salter sent his plants abroad to ripen seeds; some say to Italy, others to Algiers. This may be true or not, but that he purchased hundreds of seedlings from Smith and others of the Channel Island Chrysanthemum raisers is now a well known fact. I do not say this in any carping spirit, or to detract in any way from the late Mr. Salter's labours. Of course he must always be considered as the foster-parent of the Chrysanthemum in this country, and also in France. Looking at the new productions of Mr. Alfred Salter, Mr. Cullingford, and Mr. Teesdale, amongst other English raisers of to-day, let me ask "R. D." if their new varieties are the produce of English-saved seed, or whether they likewise obtain their seed from abroad? Popular and varied as is the Chrysanthemum of to-day, we are only beginning to get a foretaste of its value and variability as a garden flower. We must follow the lead of Continental and American raisers, and learn to treat



Chrysanthemum White Daisy.

A month hence they will be planted separately in small pots and be put in warmth. The reason they are now put in sand is that we consider this a better way than the usual one of heeling the prunings in at full length and risking injury from frost and drying up of wood. Tying late Peaches and preparing soil for top-dressing the border.

DECEMBER 16.

Our outside work to-day has been almost a counterpart of that of yesterday, namely, planting, turfing, pruning, and nailing. The frost in the early morning enabled us to do a little manure wheeling in kitchen garden before commencing the work that had been set out for the day. House duties have been washing of lights inside and out of two vineries that have been recently pruned. The walls have also been limewashed and all the paint well scrubbed, and now the Vines are ready

by different seedsmen, but I never could obtain from them a variety worth keeping; indeed they resembled Ox-eye Daisies more than anything else." This quotation is most eloquent, and shows us how quickly public taste and popular opinion may veer round, and how the flowers of yesterday, thrown on the rubbish heap as "not worth keeping," may become the cherished favourites of to-day! Of course, florists or raisers have been throwing away single-flowered Chrysanthemums for the past fifty years. It is the old, old story of "every dog having his day," for he would be a bold critic who should venture to say that single Chrysanthemums are not now popular. Whether they will retain their hold or not is a matter of minor importance. Sufficient is it for us to know that they are welcomed and cherished in many good gardens at the present time. Mr. C. L. Teesdale, of Chichester, has raised many pretty varieties, and

our favourite flower as a common annual plant raising and blooming seedlings every year as a matter of course. That this is easily done, I know by my own experience in a climate not especially, noted for its brilliancy of sunshine.

To return to the single-flowered race or section, of course it is the "florist proper" who will try most to influence people against them. It was so with the Japanese varieties, which very narrowly escaped oblivion soon after they first appeared. But these single varieties have come to us in more hospitable times, and the flower-loving public will welcome them, and those magicians of horticulture, the market growers, will cultivate them by the thousand, and even the thrifty costermonger will bring them in ass-loads to our very doors!

Let us hope, as "R. D." suggests, that these single or Daisy-flowered varieties will really prove conducive to the rearing of seedlings in England. If they do this they will have fulfilled a noble mission; but the question that will first crop up in the thoughts of amateur Chrysanthemum growers is, whence may seeds be obtained? Happily, we can make a beginning in this matter by saying that Mr. W. Thompson, of Tavern Street, Ipswich; Messrs. Haage & Co., of Erfurt, Prussia; and Messrs. Vilmorin & Co., Quai de la Mégisserie, Paris, each and all offer seed of the Chrysanthemum in variety, and I have no doubt that some of our home seedsmen can also supply it if a demand should arise. There is noble work before the National Chrysanthemum Society if they will adopt a liberal-conservative policy. In a word, such a society to merit its name should be the first to encourage novelty or variability in every way, while at the same time it should select and preserve for us the best results of the past. F. W. B.

DAFFODIL NOTES.

DOUBLE DAFFODILS.—Mr. Burbidge states that a perfectly double Daffodil can never, under any circumstances, bear seed, and he defines such a perfect double to be one in which both the style and the stamens are rendered abortive by being transmuted into petaloid organs (p. 496). Nobody will dispute his conclusion from the above premises. But I have shown that the trumpet or wide tubed Daffodils become perfect doubles without losing the stamens and pistils, and I exhibited, at the Linnean Society, a complete series of blooms of the pseudo-Narcissus from the single, through the semi-doubles to the fullest double, and in every case seed organs were present, and in two examples of the most double of all the ovaries were filled with ovules. I also exhibited fresh flowers which Mr. Baker cut through and found seed organs; and as this was done before such competent authorities as Sir J. Hooker, Sir J. Lubbock, and other well-known botanists, there can be no doubt whatever of the facts.

A double trumpet Daffodil is a double, treble, or fourfold flower, one within the other. In good examples you may trace the folds, and even to the coatings of the ovary sometimes. If it is a perfect double you will find an active ovary and the central organs, and in such a flower seed may be produced. You may frequently find the stamens and pistils within the outer folds, and on a warm sunny day I have seen doubles thickly dusted over with the ripe pollen. Bees or insects thrust their noses into such flowers, and under proper conditions the styles get fertilised, and seeds are the result.

The flower from which ripe seeds were gathered was a full double *Telamoneus plenus*—one of the doubles with the tube unburst—and there can be no doubt at all about it. I shall have pleasure in showing Mr. Burbidge a series of examples in proof of the above at any time. I do not mean to say that stamen and pistil are not frequently transmuted into petaloid growths. The contrary is the fact. These I call monstrosities and not perfect doubles. The narrow-tubed *Narcissi* are generally in this state of doubling, but they have also the doubling and triplicating of the perianth and tube. During the last dry summer the double white

Narcissus showed clearly this doubling. In several flowers I traced the crimson-edged cup between the white petals, two, three, and even four times, and there were also the organs there converted into irregular petals, and within all a yellow centre. Such flowers, which in a wet season would be pure *Gardenia*-like blooms, were in a dry season monstrosities, and they would, by a continuance of such seasons, go back to singles, as it is well known now that they do. I also investigated the doubling of the Primrose during last summer, and found it to be double, triple, and quadruple exactly in the same manner as the Daffodils, all four forms, from single to quadruple, growing on one root. I sent up a set of such blooms to Dr. Masters, and a note was published in the *Gardeners' Chronicle* at the time respecting them. We have one clump of Trumpet Daffodils which always has the tube split into segments like the perianth and several which come with eight segments to the perianth, and these we are watching carefully to see if they turn into doubles, as this appears to be the first stage of doubling, if Mr. Wolley Dod's theory is correct.

I am sorry my remarks in reference to the Leeds seedlings have been misunderstood. If anyone will refer to the first of these Daffodil notes on the Leeds varieties it will be found that I stated quite clearly that the whole of those selected by Mr. Leeds were sold by him to the Rev. J. Nelson and Mr. Barr. That was ten or a dozen years before my forays upon the old garden took place. There were many seedlings left, and these I saved as far as practicable. WM. BROCKBANK.

Teignmouth.

NOTES ON HARDY PLANTS.

TRIENTALIS EUROPEA.—This, the Winter-green or Starflower, is variable as regards size according to surrounding conditions. In some of its habitats this lovely native flower grows a foot or more high, and wherever it is seen in flower it excites one's admiration; even matter-of-fact botanists supplement their descriptions of it with such adjectives as "elegant" and "beautiful." It ought to be largely grown in our gardens, where it may be placed in the semi-shade of shrubs, and if the soil is light and moist it is pretty sure to thrive, but to have it in its best form under cultivation it should have special, yet simple, treatment, and it should be taken in hand now. In order to have fine growth, plenty of flowers, and compact specimens, the roots should be kept in a little pure leaf-mould. A seed-pan a foot square and 6 inches deep is suitable for receiving half a dozen roots. It may be placed in half-shady quarters or plunged in a border, just covering the edge of the pan. In two years the roots will be matted, and the stoloniferous tiny tubers will send up a dense and delicate crop of verdure, which sets off charmingly the white starry flowers. This plant does not like being disturbed, and yet duplicates may be taken safely from it and in good numbers. Now that the little tubers are both well formed and pushing, two-thirds of the pan may be cut into inch and half squares, leaving the other third in the middle and across the pan. These squares will lift nicely from being matted, and may be potted as taken out one by one, and they will flower the first season. The two vacant ends of the pan should then be filled up with fresh leaf-mould, into which the established roots will run freely the same spring.

OROBUS NIGER.—This, in its present state, is strikingly true to its name. The erect stems, about 3 feet high, are black as ebony, and so are the outer surfaces of the curled and empty seed-pods. These, under the least movement, tinkle like bits of tin; so here, besides having one of the best of a not over-showy genus, we have a plant likely to interest those who do not restrict their observations to floral features alone.

NARCISSUS (Ajax) MARGARITA and UMBERTO I., to which I referred some time ago, have duly flowered. I was unable to send flowers to all who asked for them. I cannot think, however,

that anyone would miss much, for both forms were poor. What a curious and interesting proof we have here of the affinity of certain plants, by the way in which certain insects live and possibly come into existence on them. The following facts at least seem to point in that direction. The woolly aphid is well known to infest the roots and collars of all kinds of Primulas. Here some sixty or seventy species and hybrids are grown, and only such as are annually shaken out and repotted are free from it. This may seem an unpleasant state of things, but I cannot say that the plants suffer at all, and in passing I may add that I do not remember ever to have seen this insect on roots in the open, only on those of pot plants, and as I find most alpine Primulas to thrive better in pots plunged in sand than elsewhere, it enjoys a wide field with me. But what I set out to say was that the woolly aphid occurs on the roots of other plants of allied genera. In turning out some pots of *Dodecatheon* to-day it was there; a week or two ago I found it on *Cortusa Matthioli*. I have met with it on fibrous parts of the roots of *Cyclamen repandum*, horrid as the taste of the roots of the Sowbread is. In a pan of *Trientalis*, too, it has been seen, and (though not quite certain), I think, on *Anagallis tenella*. In all cases the plants were under pot culture, but in some cases they were not near each other. Whilst it has been observed that where Primulas are put near each other the insect gets a footing in twelve months, pot plants plunged in a fresh part of the garden both of *Primula* and other genera have been much longer in developing the pest. Here are two curious facts—first, that this parasite literally infests the order Primulaceæ, and second, that an essential condition of its existence is that the plant roots should not be in the natural earth. Speaking of

DODECATHEONS reminds me of the difficulty of neatly dividing clumps of them, though they are all the better for that, being done every two or three years where they grow as freely as they are capable of doing. The fasciculated roots are extremely brittle, breaking off in a wholesale manner just under the crown. I have found it the lesser evil to dig up the clumps and leave them for a day or two to dry, when the succulent property leaves them and the roots are found to be more stringy in texture; then, though care is still required, pretty nearly all the roots may be retained. Should the stronger parts of the roots come off, they ought not to be cast away if increase is desirable, for each rootlet, if set in sand and leaf-mould, will make a thrifty plant in twelve months. To me Mr. Lynch's notice of

CHRYSANthemum ALPINUM (p. 440) was most useful. I have grown for several years what I take to be the true form, under the name *Leucanthemum* or *De Candolle's Pyrethrum*. It was one of the late Mr. Niven's pets, from whom I had it, I find it to be rather fickle. Sometimes it has grown and spread freely; this season it has hardly made any growth. Mild as last winter was, it was all but killed. What remained was taken up and nursed, but when put out again last spring, as just stated, it made little or no growth; it is now potted again, and is in a very small compass. I give this, my experience of it, because possibly such fickleness may help to explain its rarity in cultivation, a fact to which I can testify. It took my fancy from seeing it as a herbarium specimen; after that it was several years before I met with it in the Hull gardens. It is a most distinct alpine, the foliage of which is rather flat and in rosette arrangement. The big white flowers, singly borne on dumpy stalks, are not numerous produced, but their long duration makes up for that. I have an impression that our uneven winters (perhaps, on the whole, too warm for it) are against it, but I have a stronger impression that in order to keep it at all it should be grown in loose, gritty material. In turning over Miller's Dictionary a few days ago I met with some remarks to the effect that

CARNATIONS are fond of salt. It happens that I have three beds on what used to be an Asparagus plot. There, without any care, the Carnations

yield immense crops of both bloom and grass. The present plants are now four years old, yet last summer the grass was thick, long, and largely composed of lateral shoots. Doubtless other than the saline properties of the site, as, for instance, rich and deep tillage, must have some credit, but I should never think of setting Carnations where the soil is not deep and mellow. Another border was made on a former Celery plot, so that as nearly as possible the rich and deep tilth would be identical with the Asparagus piece. There, however, no salt, to my knowledge, had ever been used, but there is no comparison in the Carnations now on these two plots, so I think there is something in the salt theory. Yet the present growth of the Carnations, one would think, can hardly be directly affected by salt applied four years ago. Can it be that such dressings periodically given have so thoroughly freed the land from those most destructive pests (grubs and wireworm) to the whole Pink family that on the old Asparagus site the Carnations enjoy an immunity from them? I can produce another simple fact from Nature to support this idea. The moles are now working all over the place, excepting in two parts on opposite sides of the garden. Both exceptions have been Asparagus beds. I, therefore, think either there is a residue of salt not cared for by the moles, or that their instincts keep them from working an unprofitable hunt. Anyhow, there would appear to be a hint worth taking, and one could hardly be doing wrong to give a dressing of salt when forming beds for Carnations; and where it is preferred to not turn the plants out of their pots until spring, the present time would be most opportune for such an operation.

CHEIRANTHUS MARSHALLI.—I have tried this pretty Wallflower from seed. In such a case as this one should be prepared for anything, and it would be wise to expect nothing very grand; but, in the present instance, I have not only a good sprinkling of what I cannot distinguish as differing from the parent plant, but the flowers now open, with all the freshness of spring, are more than a reward for so simple an experiment. The plants are set amongst stones, broken small, such as we repair the larger walks with; a little manure and sand are scattered on the top; there Stocks, too, did finely, and the Wallflowers are little affected by frost with their roots so high and dry; moreover, they fasten their roots amongst the stones securely, also flower earlier. In short, anything on the principle of a wall for a Wallflower seems in every way to harmonise with its requirements.

ARALIA SIEBOLDI has always been grown here with herbaceous plants on rockwork and in borders; in sandy loam, raised, it is perfectly hardy, having been out fully exposed seven or eight years. In November it showed numerous panicles of bloom, which, of course, is not of much value; besides, the little frost we had at the latter end of last month caused it all to fall prematurely. As a distinct dwarf shrub, for enlivening a garden during the duldest season, nothing could be named to excel it. Even the youngest plants do well kept away from artificial heat; a cold frame is as much as they require in winter, but the pots should be plunged in sand or ashes.

Woodville, Kirkstall.

J. WOOD.

CHRYSANTHEMUMS IN THE OPEN AIR.

I AM delighted to find Mr. Muir (p. 454) advocating the growth of Chrysanthemums in the open air for cutting or decoration during November and December. I have been recommending this both in *THE GARDEN*—the great champion of open-air flowers for the million—and in several local and other metropolitan journals for years, yet, I must confess, the response has not been anything like satisfactory, so far as I can ascertain. Many seem unaccountably reluctant to grow Chrysanthemums, except under glass, and one never sees, except most casually, a line in any of the gardening journals on the matter. As a sequence, after looking through dozens of schedules at the various Chrysanthemum shows, there is not a prize in a single instance for open-air-grown blooms. Yet there is nothing insuperable about

the matter; and when thinking over it I have asked myself, even from a self-interest point of view, why do not large nursery growers like Mr. Cannell or others, who have cuttings and plants to dispose of by the thousand, recommend their growth to the million, and thus extend their business? If I thought you were at all sceptical as to attaining reasonable success, I could send you this morning's blooms from at least fifty varieties, and I hope to have 150 next year, from most of which I have been cutting during the past six weeks. These varieties are principally reflexed and pompones, with about half a dozen Japanese and twice the number of incurved. Hitherto I have been nursing the delusion that the Japanese and incurved were impracticable to grow outdoors. This season disposes of that view. At present, nailed to a south wall, I am cutting fine blooms of Elaine, James Salter, and François Délaux—no harder or easier to grow than any other Japanese—fully 5 inches in diameter, and this the first week in December. Though I mention the size, I attach much more importance to quantity than quality, and from this point of view give me the reflexed and hybrid pompones. I counted 250 perfect blooms on Golden Christine against a south wall a few days ago from an old stool planted and uncared for several years. Now, would not this make the exhibition grower, with his two or three, or even one bloom as large as a mop on the top of a 10-foot stalk, jealous? I think it should. I am not exaggerating, for an enthusiastic amateur from this town visited a distinguished Liverpool amateur recently and had to put up his walking-stick to turn the blooms aside so that he could look at them. They were very high indeed. Well, so long as very large blooms must be had to win prizes, the cultivator must resort to feeding, forcing, and single-stalk blooms. But why should not every villa and suburban garden, with 10 perches, 10 yards, or even 10 feet of a wall, have that wall clothed during October, November, and December with brilliant Chrysanthemum blooms? I have been through Lancashire, and I believe that even there, not to mention the sunny and genial south of England and all Ireland, Chrysanthemums, especially the new race of single varieties, can be thus grown and bloomed successfully. For such purposes special notes on propagation and cultivation may, with your permission, fitly come later on; but for immediate, full and accurate information on all points in reference to the Chrysanthemum, you may be perfectly safe in commending Mr. Burbidge's new book hereon.

Clonmel.

W. J. MURPHY.

Physalis Alkekengi.—This has been brighter with us this year than I ever remember to have seen it before. It is certainly useful for giving a bit of bright colour in autumn. It is to be regretted it is so unruly; in our mixed borders it spreads at a very rapid pace. Once planted there is no fear of losing it, and I have been wondering lately if anyone has used its bright red cups and berries for dinner-table decoration. I fancy, if tastefully arranged on some green Ivy leaves, they would have a very pretty effect.—J. C. C.

Greenhouse plants out-of-doors.—Two people fond of gardening, one at Torquay the other in Pembrokeshire, have written to me asking if Polygala Dalmaisiana and Sparmannia africana would succeed in their gardens, which they state are sheltered enough to grow many half-hardy plants and shrubs. The question in both cases arose from their having seen my account of their vigour in Scilly. As I have never seen them growing out-of-doors in any other place, I should like to consult your correspondents in regard to this matter. Taking into account the season of blooming of the Sparmannia and the floriferousness of the Polygala, two more attractive objects it would be hard to conceive, and since in this cycle it is often a case of fighting against springs, and not winters, they ought most decidedly to be tried. Polygala Dalmaisiana used to be a favourite exhibition plant in the days when hard-wooded plants and leaths were in fashion; and

it was probably from the west country shows that Mr. Vallance, of Scilly, first learned its value. Whether he planted or not, the snatch of hedge of it in the Tresco Abbey gardens is certainly charming.—C. A. M. C.

Coreopsis lanceolata.—Like Mr. Cornhill (p. 476), I am very fond of this plant, but somehow or other it will not survive the winter with me here. Two years ago I obtained a strong plant of it, and every care was bestowed upon it. It was planted in a good border of light rich loam and mulched with rotten manure, but, alas, after growing freely through the summer, it died during the winter months. Still, I mean to have another trial, and this time I hope to succeed with this, the loveliest of all the Coreopsis.—R. GREENFIELD, Warwick.

Ficus repens.—We have this growing on a wall in the open air. The wall is 4 feet high, and faces the north-west. It is densely covered with dark green foliage, which assumes a bronzy hue after severe frost. The plant in question has been growing in its present position for eight years, during which time we have had some severe frosts, but it holds its own under all circumstances. I have also got it thriving most luxuriantly in a cool fernery, where I find it to be most accommodating. It adheres tenaciously to wood, iron, stone, or glass.—T. B. FIELD, Stanley Hall, Bridgnorth.

Cobæa scandens.—In reply to "Cobæa" (p. 472) allow me to say that I fear he will find it difficult to preserve Cobæa scandens over the winter, as the stem is of a very soft nature and does not readily resist frost. However, this matters little, as seed can be readily obtained, and if sown in a little heat in January or February and planted out in May, it will grow with great vigour and cover a large space before autumn. It is desirable to keep a plant or two under glass so as to have a start of the seedlings. Seed is produced freely, but seldom early enough on one-year-old plants to ripen thoroughly in the open air.—S. P., Monkstoun.

Planting Narcissi.—I feel sure that an examination of Narcissi which have remained in the ground the summer through would convince the most sceptical that planting should never be deferred beyond the early part of September. Having last July a few bulbs of cernuus, for which I had no place at the time, I laid them in together, thinking it would be better to do so and transplant them, even if they had made roots, than to leave them in a dry state until late autumn before planting. A few days ago I took them up, and they have made 2 inches of growth, and formed quite a thick network of fibrous roots. Can anyone, therefore, doubt that bulbs in this condition will flower more strongly than if planted in November?—J. C. B.

Anemone-flowered Japanese Chrysanthemums.—One who has been so fortunate as to see most of our great Chrysanthemum shows, writes to me as follows: "Every person who has seen this class, or rather the few types of the class that now exist, regard them as having a bright future—in fact, one of the good things that came to the front this season." Rather curious that Mr. Burbidge in his excellent book on the Chrysanthemum, referring to this class, some time ago, and noting the variety Garnet, says, "this seems to be the forerunner of a sub-race of Japanese Anemone-flowered Chrysanthemums." So it is, but to my mind far inferior to Fabian de Maderanaz, introduced last year, and of that sent to me from Swanley, the published portraits fail to give anything like a correct idea—it is far more beautiful.—W. J. MURPHY, Clonmel.

Harpalum rigidum.—This bright and beautiful Composite is closely allied to the Helianthus, to which it bears a close resemblance, and from which it differs in habit, being dwarfer, more slender, and more graceful in outline. The starry form and the peculiar tone of its golden flowers are so striking, that the most unobservant cannot fail to be arrested by its appearance when planted either in groups or as separate specimens in the

herbaceous garden or on the lawn, for either of which positions it is peculiarly well adapted, while as a decorative flower for the drawing-room it is particularly valuable, as it possesses the brilliant colour of the Sunflower without inheriting its formality and coarseness. It is generally supposed to be an annual, and as it does not perfect its seeds well in this country, its cultivation is not so general as it should be. It forms, however, small tubers on its somewhat rambling roots, which, if carefully preserved from frost either by a thick mulching of leaf-mould or other similar material, or if taken up in the autumn and treated the same as Dahlias, they will in either case produce an abundance of strong plants for early flowering the following year.—W. C. T.

Precocious blooming Daffodils.—Through the kindness of your frequent correspondent, the well-known florist and successful cultivator of hardy border plants, Mr. Wood, of Kirkstall, near Leeds, I have had the opportunity of seeing one of the first blooms produced in the kingdom of the new Italian variety of *Ajax* *Narcissus* *Regina Marguerite*, raised and sent out by Messrs. Damman, of Portici, near Naples, and alluded to by the above-named grower on page 455 of your current volume. The bulbs were received from Portici in June, and were of poor and inferior size, though thoroughly plump and well ripened. They were planted in pots which were left standing on the walk of the garden up to the end of October and then put into a warm greenhouse, where after three weeks they came into bloom; only, however, three of the above-named variety and one of its companions, named *Rè Umberto*, bloomed out of the small lot received by Mr. Wood. Having carefully compared the bloom sent to me with its portrait on plate 1035 of Regel's "*Gartenflora*," I find that when due allowance is made for the small-sized bulb from which the flower was produced and for the somewhat unnatural season of blooming it sufficiently nearly corresponds, though not more than two-thirds the size of bloom depicted on the plate; the colouring is as near as possible the same. The variety bears a strong resemblance to Mr. Barr's seedling *Exquisite*; indeed, I have heard that that grower says they are identical, but from what I know of the English seedling I should say that the bicolor marking of the outside of the perianth is much more distinctly marked in the Italian seedling. However, when we see the new-comer bloom from full-sized bulbs in the open air we shall be able to form a more accurate opinion.—W. E. G.

Leeds' Narcissi.—In reply to the comment on Leeds' Narcissi by Mr. F. W. Burbidge in the last issue of *THE GARDEN*, permit me to say that the Leeds' collection was purchased by Mr. P. Barr, my friends the late Rev. John Nelson and W. B. Hume, Mr. G. J. Braikenridge, and myself, Mr. Barr having half of them, and we dividing the others equally. The facts of the case are as follows: Mr. Leeds said that unless he could get £100 for his collection, he would dig them all in. Mr. Barr did not feel disposed to find so large a sum, but remembering that the late Rev. John Nelson was a lover of Narcissi and an enthusiast in the culture of all bulbs and herbaceous plants, he mentioned the matter to him, and, I believe, both of them grieved much at the idea that such a fine collection should be destroyed; and that the hybridisation of the Narcissi of a lifetime should not be lost to posterity, it occurred to Mr. Nelson that if he could get a few others to join in the purchase this might be avoided, and pursuant to this idea he mentioned the circumstance to me, and told me how anxious he was to secure them, and asked whether I would take a share. I assented, and suggested that Mr. W. B. Hume, his brother-in-law, and our mutual friend, Mr. Braikenridge, would probably be induced to take a share on his recommendation. The result was that the collection was purchased in 1874. At that time I was residing at Chase Park, and on our family selling the property in 1879 I moved the bulk of my Narcissi to my present address, but at the same time leaving thousands of bulbs at Chase Park, now the residence of Mr. Jno. W.

Ford, J.P. From the above facts it is quite certain that all the Narcissi did not pass into the hands of Mr. Brockbank, and if any of the choice seedlings did do so, it was at the expense and loss of the purchasers, but I think those who know Mr. Barr would trust to his being able to take care of himself and friends and seeing that he got what he purchased.—HERBERT J. ADAMS, *Rosecath, Enfield, N.*

AQUATIC IRISES.

IRIS KÆMPFERI, or more properly *I. lævigata*, is superior as regards density of colour and beauty of marking and spotting to all others belonging to this highly useful class of spring-flowering garden plants. Considering the short time during which the type has been in our hands, the number of beautiful varieties in cultivation is truly remarkable. The adaption of *Iris Kæmpferi* for low, damp, but well-drained positions renders its cultivation comparatively easy, even where most others would prove failures. Its cultivation will be successful in almost any soil provided moisture be unsparingly given, that being the chief essential to its well-being, but in naturally dry localities peat is best, as it retains moisture longer than any other mixture, and when well drained it



Iris sevigata

also keeps the roots clean and healthy. Irises of this class do well near lakes or other ornamental water, and the surprising way in which their roots make for the water indicates their preference for such situations. The annexed illustration is a good representation of the typical *I. Kæmpferi*, as introduced in 1857 by Von Siebold from Japan, and flowered at Ghent in the same year. It grows from 2 feet to 3 feet in height; its leaves, which are about the same length and an inch broad, taper to a fine point; the flowers, which are produced one to three on a scape, are rarely less than 6 inches in diameter, and they vary in colour from deep to intense red-purple. The best and quickest way to propagate this *Iris* and its varieties is by division of the root, as seedlings always take two or more years to become strong plants. Amongst the many varieties those most diversified in colour and marking are the following—viz., *Alexander* *Von Humboldt*, white, a free-flowerer; *violacea*, deep violet, furnished with six instead of three petals, measuring nearly a span broad; *Rutherford Alcock*, a pretty violet-crimson with a golden yellow eye and edged with white; *Prince of Wales*, a handsome variety, lilac, white and violet-veined, and blotched with yellow; *Princess*, white, with just a tinge of violet; *Mad. Legrelle de Hanis*, white with golden eye; and *Reinwardti*, handsome deep blue, with darker veins and a clear yellow eye. Amongst others may be mentioned *Duke of Teck*, *Duke of Albany*, *Blumei*, *A. Von Siebold*, *Princess Mary*, *Glymi*, *Souvenir*, and others. K.

Cape Gladioli.—"F. W. B." (p. 471) speaks of the general neglect of the Cape species of *Gladioli*, of which so many are figured by Curtis. The cause of this neglect is easy to find; these bulbs cannot be procured for love or money. I have been looking out for some for twenty years or more, and have looked in vain. I have now before me the list of bulbs advertised for sale at the Botanic Gardens, Cape of Good Hope. Only ten species are offered, and only two or three of these are of any rarity. Two other bulbs I have in vain looked for from that quarter (two *Streptanthras*) the officials had never heard of, and as to *Lachenalias*, whose nursery is the Cape, I have a far better collection than can be shown at the gardens in question. Will "F. W. B." tell us where they (the *Gladioli*) are to be had, and I, for one, will gladly take them in hand?—A. R.

INDOOR GARDEN.

DOUBLE PRIMULAS AND THEIR CULTURE.

OF all flowers which we cultivate either for the embellishment of the conservatory, the dinner-table, or for making bouquets, none to me has the charm that belongs to the double *Primula*. Assuming that we have good cuttings in May, we proceed as follows: The first thing is mixing the soil, which consists of two parts loam, one part leaf-soil, and one part sharp sand. We then crock small 2½-inch pots, filling each to the rim with this compost; then we take them to the propagating house, set them all level on the floor, and water them. When settled we commence to put in the cuttings. Each cutting being taken off with a heel, we make a hole in the centre of the soil and insert it, filling in the hole with sharp sand and making all firm. We then tie up the foliage to a small stake very carefully. Double *Primulas* are struck here in a bottom heat of from 70° to 75°. The pots are plunged to their rims in sawdust. A very great point in their propagation is never to let a leaf flag; therefore as each cutting is potted, place it in the propagating case at once. When the case is filled give them a slight watering and leave the lid of the case open until the foliage is quite dry; then put in two or three dozen lumps of charcoal to suck up the moisture. Keep the cuttings close and carefully shaded from the sun. They take from five to six weeks before one can see the roots at the sides of the pots; we then give air and gradually harden them off. When the roots, in plenty, but not matted, can be seen, the time for repotting is at hand.

These cuttings we shift into 4½-inch pots—that is, if for flowering. If for stock, we shift all the best plants into 6-inch pots, keeping them in the same house, if possible, until all danger of flagging is over. They are then placed in ordinary three-light boxes under a north wall on a good bed of coal ashes; and here I must note they should be quite shaded from sunshine and kept close. I may be told that the sun seldom shines on the north side of a wall, but on a hot day in July, when the sun is working round to the west, the plants suffer if not duly shaded. They will want but little water for the first week, but a slight bedewing with the syringe is very beneficial to them. The great point in bringing these *Primulas* to perfection wholly and solely depends upon the watering; therefore give water to those that are dry only. By the first week in October all these little cuttings will be fine strong stubby plants throwing up flower-spikes. They should then be moved into a light, airy house and set on shelves. This house should be kept at from 50° to 55° at night; opening the top ventilators in fine weather will enhance the colour of the flowers and the stubbiness of the plants. About the end of November they will be in great beauty, when each should have a top-dressing of sifted, light, sandy soil, with about 2 ounces of Beeson's manure added to each peck; slightly stir up the surface and apply the top-dressing. When placing these plants in their flowering pots we use the following compost, viz.: Two parts good turfy loam, one part charcoal and sand, and one part sifted manure

from an old hotbed, of which the greater part was leaves. If the old flowers and dead foliage are kept well picked off, they will look well in their respective positions until the middle of March. They are then well cleansed and again top-dressed and placed near the glass on shelves, when they make fresh growth, and this growth forms the cuttings with which we begin in May.

Burghley, Stamford.

R. GILBERT.

Comte Brazza's white Violet.—I have just seen a quantity of blooms of this new Violet with which I am very pleased. They were large, full and double, and deliciously fragrant, without that stain of colour which many so-called white Violets possess. If the plants should turn out good growers and free flowerers, this Violet will supply a want long felt, and will be a fit companion for Marie Louise, which is the best double Violet we have. Now is the time to work up a stock of young plants, which may be done by planting the old ones out in a frame, taking off every runner and dibbling them in under handlights to root.—S. D.

Luculia gratissima as a wall plant.—Just outside the morning room door which leads into the conservatory at Bryn Glas, near Newport, this plant has been put into a bed and trained over a large space on the wall, and at present it is dotted over with many fine trusses of lovely delicate pink blossoms, and the delicious fragrance which they emit is delightful. There are many well grown and attractive plants in the conservatory just mentioned, but none so striking as this, and I am sure if your readers could see it, Luculias would be oftener met with than they now are in conservatories. They bloom naturally at this time, and I would place them in the foremost rank amongst December flowering shrubs. The plant at Bryn Glas is growing in a mixture of peat, loam, and sand. It required a little extra attention to establish it, but after that it was amongst the easiest cared-for of greenhouse plants.—CAM-BRIAN.

Chrysanthemums at Christmas.—During the last few years the Japanese varieties of this useful flower have become extremely popular, and I find amongst them several that have the valuable habit of flowering after the majority of other kinds are over. Therefore by adopting a system of late propagation and retarding the flowering as much as possible, Chrysanthemums might be had in bloom at Christmas, or even later, when, I need hardly say, they would be most acceptable. Such fine blossoms, however, from plants checked in growth need scarcely be expected as from those grown on uninterruptedly, but this detracts little from their value at the date mentioned, when one is glad of anything in the way of flowers for cutting, especially white flowers, and of these there are several excellent sorts, amongst which I may mention Ethel and Sarnia. From amongst those possessing various shades of colour I pick out such as show a natural propensity for late flowering, and propagate them late in the summer from tops of the flowering shoots. I put three in a 4-inch pot; they soon strike root in a close frame, and may then be inured to the open air and grown on in an open sunny position until the bloom-buds are formed, when they should be set in the coolest and shadiest place available, keeping them out-of-doors until danger from sharp frosts renders it unsafe to trust them out longer. When placed under glass, a house with a north aspect is best for them; there they can expand gradually, and be allowed a free circulation of air.—J. G. Hants.

Ochna multiflora.—This handsome shrub, hitherto so scarce on account of the difficulty attending its propagation, has been successfully raised from seed in Mr. B. S. Williams' nursery. Though only a few months old, the little seedlings have made sturdy growth, and show every promise of growing rapidly on to a flowering size. This is such a beautiful shrub when covered with large yellow blossoms and scarlet fruit, that it is satisfactory to see that it will soon be less common than it hitherto has been.

ORCHIDS.

NOTES ON ORCHIDS IN FLOWER.

The sight of Mr. Bull's Orchid houses at Chelsea at the present time makes one forget for the moment that we have arrived at the lowest ebb of the dull season for flowers. One could scarcely credit, on seeing the cool Orchid house for instance, that so much bloom could be had so near Christmas time. The houseful of *Odontoglossum Alexandræ* is alone a fairy scene, there being crowds of flower-spikes, numbering about 150, loaded with blossoms hanging gracefully in all directions. This abundance of winter flowers is doubtless the outcome of thoroughly ripened bulbs, and in this nursery means for attaining this end have been specially provided for in the houses being so constructed as to admit of the maximum of light to the plants and abundant ventilation. From now onwards till May the houses occupied by cool *Odontoglossums* will furnish of themselves matchless displays of flower. Though the bulk of the show is made up of *O. crispum* and *Pescatorei*, there are various others in season; for instance, the handsome pale form of *O. Wilckeanum* called *pallens* is in full bloom, as is also the Almond-scented *O. madrense*, one of the prettiest in the genus when finely flowered, as here, where it is successfully grown with the *crispums* and other cool species. Among the endless forms of *O. crispum* one—the true roseum—is worthy of special note. The broad sepals as well as the lip are almost entirely of a rich rose-purple. The cool house is perfumed delightfully with the modest little *Trichosma suavis* and the violet-scented *Oncidium tigrinum* (Barkeri), which, by the way, is one of the nicest Orchids one can grow, even in an ordinary greenhouse. It is showy and its perfume delicious. Other Orchids in bloom now include *O. cucullatum* and a variety of it with broad lips called *giganteum*; *O. tigratum*, a rare and interesting small species; the continuous flowering little *O. cheiroporum*, and *O. Forbesi*. Of the last there are several varieties in flower, one named *superbum* being particularly richly marked and large. A large number of flowering plants of *O. ornithorhynchum* in another house makes quite a show in itself.

DENDROCHILUM COBBIANUM, a new species, and yet scarce, is one of the most charming Orchids imaginable with those whose idea of beauty does not stop with brilliant colouring. Like the two other species, *D. filiforme* and *glumaceum*, it is of compact growth, and from the midst of its evergreen foliage it sends up numerous erect flower-spikes, which suddenly bend over in a whip-like fashion, the flower-bearing portion being thickly set with the tiniest flowers of bright orange and pale yellow. Both the typical form is in flower and a variety of it called *giganteum*, so named on account of its being larger in all its parts and altogether a stronger grower. This charming Orchid is one of the most elegant of the family.

CÆLOGYNE BARBATA and *GARDNERIANA* are both in flower, the latter being but seldom seen. It bears pure white flowers, thickly set on shortish spikes produced from the base of the bulbs. *C. barbata*, though commoner, is much handsomer, and quite among the select kinds. It carries its flowers on tall spikes above the broad foliage. The flowers are large and have peculiarly dark bronzy lips, which make a strong contrast with the snowy white sepals. It is a capital cool house Orchid, though not so easy to many as some of the other *Cælogyne*s, such, for instance, as *C. cristata*. *C. ocellata maxima* is in bloom, but it may be considered as out of season.

DENDROBIUM FYTCHIANUM is one of the loveliest Orchids we have seen in flower for a long time. No other flower can well surpass the delicacy and elegance of its flowers, which are about an inch across, snow-white, with just a touch of rosy pink in the centre. Its spikes are produced on the old growths, and in the case of the plants in this nursery the spikes bear, we should say, a score of flowers. It is particularly suitable for cutting,

as it may be regarded as pure white. It has been in bloom for a long time and is still fresh. Other flowering *Dendrobies* are *formosum giganteum* and *D. fimbriatum oculatum*.

A NEW *CALANTHE* of the *vestita* forms is in flower. It is distinct from all the rest, inasmuch as the centre is quite a copper colour instead of a yellow or red. It is aptly named *C. vestita cuprea oculata*. The scarce *C. Domini*, one of the earliest, if not the very first, of Mr. Dominy's hybrid Orchids, is amongst the handsomest of winter Orchids. Its bold ample foliage and tall spires of purple bloom have a telling effect in groups. Its parents, too, *C. Masuca* and *C. veratrifolia*, are likewise in flower side by side with the progeny.

CYPRIPEDIUM HYBRIDUM and *DAUTHIERI*, two rare hybrid Lady's Slippers, are flowering side by side in company with *C. Harrisianum*, so that the distinctive features of each may be readily discerned. They are unquestionably very nearly related, so much so that it is difficult to describe their differences, though seeing them all together they are apparent. They may be ranked *Harrisianum* best, *hybridum* next, and then *Dauthieri*. *C. hybridum* is one of Mr. Bull's introductions, and *Dauthieri* originated on the Continent. All the varieties of the old *C. insignis* may be seen in this nursery side by side. They are five, viz., *Maulei*, *Chantini*, *violaceum punctatum*, *albo-marginatum*, and *maximum*. The two latter originated here. The first is aptly named, inasmuch as the dorsal sepal is marked with a broad band of white which extends nearly all round it. It is quite distinct from the rest in this respect. The variety *maximum* has the flowers much larger than those of the type, the difference being particularly noticeable in the dorsal sepal, which is very broad and marked with more green. Other *Cypripediums* in flower include *C. Lawrenceanum majus*, the so-called *C. Schlimi album*, which is not really white, but decidedly pink; the pretty *Warneri*; *barbatum giganteum nigrum*, with a large black pouch; and *C. Spicerianum*, of which there is a variety named *nigrescens*, having unusually large flowers with the pouch of a deep purplish green inclined to black.

ANGRÆCUM CHAILLUNUM, a rarity, even in the choicest collections, is in full bloom. It is very handsome, having large quaintly formed flowers, pure white sepals, terminated by the characteristic long spurs of the *Angræcums*. We thought it finer than *A. Ellisii*, which has been so much written about and so highly priced. This is one of Du Chailla's West African species; therefore is not new.

CYRTOPODIUM ANDERSONI is not often seen in flower, even by those who are always about among Orchid collections. Mr. Bull has a very fine plant of it just now in bloom. It bears a large wide-spreading panicle of showy flowers of a bright canary-yellow. The flowers are very lasting on account of their thick wax-like texture. An enthusiastic Orchid lover would, we think, go in ecstasies at the sight of a large houseful of specimens of the lovely *Cymbidium Mastersii*, and the noble flowered *C. giganteum*, both of which are developing spikes in abundance. The luxuriant grassy foliage of these Orchids seen *en masse* with flower-spikes peeping out here and there is one of the beautiful sights that Orchids afford, and uncommon withal. Mr. Bull, we see, grows his *Cymbidium*s of this class in a loamy soil. This, no doubt, accounts for their unsurpassable vigour.

Other Orchids now in bloom here, and which may be added to the list of those that afford bloom at Christmas, are *Maxillaria grandiflora* and *M. venusta*, both indispensable even in a small and choice collection. *Lælia autumnalis atrovirens*, of which there is a grand mass in one of the houses, is a show in itself. Among the *Cattleyas*, which, by the way, are bristling with hundreds of incipient flower-sheaths, is the pretty *C. luteola*, a modest-looking flower compared with its gorgeous congeners, but highly interesting to the orchidist. It is the same as *C. Holfordii*. *Mormodes pardina*, a species with quaintly twisted flowers, is not brilliant, but its aromatic perfume

would captivate most people. Another fragrant flower is *Pilumna fragrans*, which for cutting for dinner-table decoration at Christmastide is matchless for chaste purity and sweetness. The nobilis variety is preferable to the original, and should be selected even if it costs a little more. It is altogether larger in flower. The vivid little *Sophranitis grandiflora* sparkles with its scarlet bloom in several of the houses both cool and warm. *Barkeria elegans*, a bright little Mexican Orchid, is flowering admirably this season, owing to the long warm summer. Among the *Masdevallias*, the several hundreds of *M. tovarensis* form quite a sheet of white bloom, a beautiful sight, together with a few other winter-flowering species.

ORCHIDS AT ELSTEAD.

SINCE my last visit to Mr. Ingram's garden at Elstead, near Godalming, some twelve months ago, great improvement has taken place both in the quality and quantity of the Orchids; the number of houses, too, has increased; for instance, a span-roofed Cattleya house has recently been built 65 feet by 25 feet; in this there are side tables all round and a central path, thus forming two centre stages, each centre stage being double-shelved—a plan by means of which space is economised and the plants are easier to get at. The arrangement for top ventilation is both simple and effective, and there is a plentiful supply of bottom ventilators. Sunk tanks occur all round the house, so that every drop of rain-water is secured. In this house are some large masses of the following varieties, viz., *C. Mossiae*, *C. Trianae*, both the *Ibague* and *Popayan* kinds; *C. gigas*, some of them being very distinct forms; *C. Percivaliana*, likely to produce a fine show of bloom soon; *C. Sanderiana*, recently imported, but breaking freely; *C. Warneri*, with very fine growths; *C. aurea*, some sixty or seventy plants, this kind being an especial favourite at Elstead; *C. Dowiana*, *C. Gaskelliana*, some fine plants of *Lælia purpurata*, *L. elegans*, and *L. harpophylla*; some good plants of *Masdevallia tovarensis* were in flower; also *M. Chimera*, a fine variety; several examples of *Lycaste Skinneri*, *Oncidium tigrinum*, *Cypripedium Schlumi* album, a charming plant with flowers quite a third larger than ever I saw them before. Of *Vanda tricolor* there was a good variety, also the true *Oncidium Weltoni*, *Cattleya Leopoldi*, with a good bright and compact spike; *Warszewiczella velata*, a very deliciously scented Orchid, and *Lælia anceps* with twenty-three spikes. Of *Odontoglossums* there are here some two thousand plants. In the principal house devoted to them are some fine plants with bulbs made in this country larger than those on imported plants, and with equally good flower-spikes, many of them branching. Some of the best types of *O. crispum* were in flower. On *O. Pescatorei* were branching spikes 2 feet long; *O. constrictum* was also in flower, and although a small-flowering variety, yet at this season of the year the effect produced by it was most pleasing. The gem of the house was, however, an exceedingly fine hybrid, the flowers of which measure over 3 inches in diameter, and they are of a beautiful lively yellow spotted with bright cinnamon-red. Of *O. gloriosum* I noticed one of the darkest and best forms I have seen. The next two houses are devoted to semi-established and recently-imported *Odontoglossums*. My greatest surprise was, however, the advance which the *Phalenopsis* have made in so short a time, even packed together, as they are, awaiting the finishing of a new house now in course of erection. This is span-roofed, thoroughly heated with 4-inch pipes, and tanks all round. On *P. Schilleriana* were leaves from 15 inches to 16 inches in length by 5 inches and 6 inches across; *P. Sanderiana*, 7 inches to 8 inches; *P. amabilis* and *P. grandiflora*, both good; and of *P. violacea* were some fine plants of Mr. Ingram's own importing. The next house, devoted to miscellaneous plants, contained some good examples of *Dendrobium Dalhousianum*, *D. Wardianum*, *Peristeria elata*, with some remarkably large bulbs; *Cypripedium Spicerianum*, and *Oncidium Lanceanum*, a very fine variety. E. S.

NOTES OF THE WEEK.

Gardeners' Benevolent Augmentation Fund.—Mr. Owen Thomas, Chatsworth, has sent us a fourth list of donations to this fund amounting to £14 7s. 6d.

National Horticultural Society of France.—Next year this society will hold a grand international flower show in Paris. It will take place in the early part of May. Further particulars will be published in January. M. Léon Say, senator, has been elected president of the above society in place of the late M. A. Lavallée.

A new society for Hammersmith and its district has just been formed under the title of the St. Peter's Gardeners', Amateurs', and Cottagers' Improvement Society. Monthly meetings for reading papers and discussing subjects of gardening interest are to be held, and it is also proposed to hold a Chrysanthemum show in connection with it next year. Mr. H. J. Farrow, 62, Black Lion Lane, Hammersmith, is the honorary secretary.

Royal Botanic Society.—The committee appointed to award the silver and bronze medals for boxes for carriage of cut flowers by Parcels Post report that they advertised certain conditions to be complied with in competition for such medals. Eight manufacturers submitted sample boxes of cardboard, wood, and metal, both folding and rigid. The committee awarded the silver medal to Messrs. R. Hall & Son, of Hammet Street, Minories, for a tin box, 15 x 9 x 6 inches, costing 9s. 6d. per dozen, well made and strong, capable of holding about 2 pounds of cut flowers; and the bronze medal to Mr. J. W. Hoffman, of 54, Junction Road, for a small tin box, with lifting frame, furnished with elastic bands, to hold single flowers or sprays, the ends of the stalks dipping into damp Moss at the bottom of the box.

The spring exhibitions of this society will be held next year, as is usually the case, in the gardens in the Regent's Park on March 25 and April 22 next. At the March show special prizes for *Amaryllis* will be offered by an amateur who is anxious to encourage the cultivation of these plants. There will be three classes, all of which will be open. A.—For the best seedling, first prize, £2; second, £1. B.—For the best six *Amaryllis* named. Preference will be given to the collection that contains the best proportions of light and dark varieties. First prize, £2; second, £1. C.—For the best variety selected from among the plants exhibited in class B. For the best dark variety, £1; second best, 10s. For the best light variety, £1; second best, 10s. Fine form and substance are the points especially aimed at. Colour will not be regarded unless two flowers should, in other points, be considered equal in merit; the better coloured of the two would then receive the higher prize.

PARKS & PUBLIC GARDENS.

The inhabitants of Harrow are taking active steps to preserve Harrow Weald Common, its existence as an open space being threatened by the Highway Board, who are desirous of selling it for building purposes.

Southwark Park.—The Metropolitan Board of Works have, in response to the request of a deputation from the inhabitants of South Bermondsey, decided to make a wicket-gate entrance to this park from Abbeyfield Road, which will be a great boon to the residents of this thriving and already populous neighbourhood.

A national park for New South Wales.—The Government of New South Wales has reserved one of the finest and most picturesque portions of the colony for a national park. It is situated in the Illawarra district, and embraces an area of 36,000 acres, having a frontage of 7½ miles to the Pacific Ocean. The park generally may be described as high table-land, from which, at numerous places, excellent and extensive views are obtained of the ocean, Port Hacking, Botany Bay, Sydney, &c., while at the same time it possesses deep gorges and rich flats covered with beautiful foliage, bordering running streams of the purest fresh water. The high table-lands to some extent consist of comparatively barren stony heath and of fairly good land, the latter in areas suitable for the formation of recreation, review, and encampment grounds, or of plantations of ornamental trees, &c., situated at elevations of from about 350 feet to about 900 feet above high-water mark. This park will be made easily

accessible from Sydney by the Illawarra Railway, now in course of construction.

Preservation of Highgate Woods.—A public meeting in support of the movement now being made to secure the Highgate Woods as a place of health-giving resort and recreation for the people in perpetuity was held the other evening at the Northfield Hall, Highgate. There was a numerous attendance, and much interest seemed to be manifested in the object of the meeting. Lord G. Hamilton, M.P., presided, and in opening the proceedings said that there was a unanimous wish on the part of the inhabitants of that vicinity to participate in the preservation of those beautiful woods. He had been asked by the Baroness Burdett-Coutts to express her entire sympathy with the movement, and to add that she was doing all in her power to preserve for the use of the public, Parliament Hill, Hampstead, as an addition to Hampstead Heath. In dealing with this question of the preservation of open spaces, the great difficulty was the absence of a sufficiently armed local authority, and with a view to obviate that difficulty he was prepared to move in the House of Commons for a Select Committee to inquire into the best means as to how the open spaces of the metropolis might be preserved for the benefit and use of the public for ever. He had a private assurance that the Corporation of the City of London would be prepared to find some funds to assist the movement. Speeches in support of the object of the meeting were made by Mr. H. R. Williams, Mr. Daniel Grant, M.P., Mr. J. T. Bedford, Mr. A. G. Harvey, Mr. J. Carvell Williams, and others, and the following resolution was passed: "That this meeting, viewing with alarm the steady absorption of open spaces in the north of London, desires to express its emphatic opinion that the enclosure and destruction of the Highgate and other neighbouring woods would prove of lasting and irreparable injury to the northern districts of London." A committee was appointed to take all necessary steps to secure the object in view.

Gilbert's Universal Savoy.—Mr. Gilbert, of Burghley, writes to say that we have omitted to mention in "The Garden Annual" among certificated vegetables that his new Universal Savoy was awarded a first-class certificate by the Royal Horticultural Society. Apropos of the Savoy we might mention that Mr. Gilbert has sent us another sample of his *Chou de Burghley*, which after cooking we thought delicious—in short, one of the best vegetables we have tasted in winter. It is very succulent, and the flavour reminds one of a combination of Asparagus and spring Cabbage. The heads are in the shape of elongated cones, and of a pale green colour. It is a great gain.

Some winter Roses.—Madame Falcot is like the popular performer who advertises a never-ending series of "positively the last appearance."—G. J.

* * A beautiful bunch of Roses came with the above on December 15 gathered from an open wall.—ED.

Chrysanthemum sport (A. J. C.).—A very pretty sulphur-tinted sport of Ethel. Decidually worth perpetuating and naming.

Naming fruit.—Readers who desire our help in naming fruit will kindly bear in mind that several specimens of different stages of colour and size of the same kind greatly assist in its determination. Local varieties should be named by local growers, and are often only known to them. We can only undertake to name four varieties at a time, and these only when the above condition is observed. Unpaid parcels not received.

Names of fruit.—W. C. Waller.—1, Hunt's Deux Ans; 2, Flower of Kent; 3, Sweeney Nonpareil.—J. Adams.—Cox's P. mona.—H. M. M.—Scarlet Nonpareil.—A. H.—1, Adam's Pearmain; others not known.

Naming plants.—Four kinds of plants or flowers only can be named at one time, and this only when good specimens are sent.

Names of plants.—E. J. H.—1, *Blota orientalis*; 2, sub variety of No. 1; *Retinospora plumosa*; 4, *Juniperus Sabina*.—E. F. G.—1, *Daphne indica variegata*; 2, *Pittosporum Tobira*; 3, *Aspidistra lurida variegata*; 4, appears to be *Plumbago capensis*; send in flower.—R. Young.—*Lycaste Skinneri*, a good dark lipped variety; *Dendrobium formosum* (typical form); *Oncidium unguiculatum*. Send No. 1, Adam's; flowers were damaged





